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Ms. Tamara Cardona-Marek
Alaska Department of Environmental Conservation
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Fairbanks, Alaska 99709

Environmental

Subject:
First Semi-Annual 2008 Groundwater Monitoring Report
Chevron 306443 (Former Unocal Bulk Plant 0207)
Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska
ADEC File No.: 100.26.040

Date:
August 13, 2008

Contact:
Greg Montgomery

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206.726.4742

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Our ref:
B0045507

Dear Ms. Cardona-Marek:

On behalf of Chevron Environmental Management Company (Chevron), ARCADIS U.S., Inc. (ARCADIS) has prepared this report to document the first semi-annual groundwater monitoring event for former Unocal Bulk Plant 0207 (the site) located at Gate 28, West Ramp at the Fairbanks International Airport in Fairbanks, Alaska. The site location and surrounding area are shown in **Figure 1**. This report summarizes the first semi-annual 2008 groundwater sampling event conducted at the site by Oasis Environmental, Inc. (Oasis) on March 29, 2008. This work was conducted under the direction of a “qualified person” [18 AAC 75. 990 (100), and 18 AAC 78.995 (118)].

Site Description

The site is a former Unocal Bulk Plant Facility (Unocal #0207, Chevron #306443), located at Fairbanks International Airport (FIA), Gate 28, West Ramp, Fairbanks, Alaska. The former Unocal lease included Parcel A and Parcel B of FIA Block 1, Lot 8, located at 5245 Airport Road. The site is currently owned by the Alaska Department of Transportation and Public Facilities (ADOT&PF) which is leasing Block 1, Lot 8 to Frontier Flying. Frontier Flying has been leasing Lot 8 since April 2003; previously Frontier Flying subleased Lot 8 from Falcon Properties. Nearby properties include the ADOT&PF airport maintenance and Alaska Rescue Fire Fighting (ARFF) facility across Brumbaugh Avenue to the northeast, and Northern Air Cargo (NAC) adjacent to the southwest.

Unocal formerly subleased a portion (Parcels A and B) of Lot 8 from Trans-Arctic Airlines and operated a fuel distribution facility that provided aviation gasoline and Jet-A fuel to airplanes at FIA. Parcel A was a rectangular piece of land, 100 feet in length and 50 feet in width, running northwest to southeast approximately 20 feet inside the northeastern lot boundary. Parcel B was a circular parcel of land adjacent to the southeasterly property line of Lot 8 and having a diameter of 200 feet (**Figure 2**). The former Unocal lease portion is presently being used only for periodic vehicle storage, with the exception of the northwest corner of Parcel A. Frontier maintains a 12,000-gallon Jet-A fuel aboveground storage tank (AST) within the asphalt cutout near the northwest corner of Parcel A. It is unclear if the AST is within the limits of former Parcel A; however, the AST is on the gravel that was exposed during the removal of Unocal's fuel distribution system.

In October 1991, Dames & Moore observed and monitored the removal of four 10,000-gallon underground storage tanks (USTs), two pump islands and associated piping, as reported in "Site Assessment Report for Underground Storage Tank Closure, CEM Leasing, Inc., Fairbanks, Alaska," dated December 17, 1991. The USTs were seated in sandy gravel, covered with 3 feet of silty sand, and capped with asphalt/concrete. Excavation and removal of the underground piping included two 5-foot-deep by 4-foot-wide trenches.

The UST excavation was approximately 65 feet by 40 feet and averaged 10 feet in depth. The four USTs were "free of dents and holes and appeared to be in good condition," according to Dames & Moore. Groundwater was encountered in the excavation; no free product was observed. Concentrations of diesel-range organics (DRO), and benzene, toluene, ethylbenzene and total xylenes (BTEX) and gasoline-range organics (GRO) for several samples exceeded the Alaska Department of Environmental Conservation (ADEC) cleanup levels. Approximately 1,200 cubic yards of soil were excavated during UST and pipeline removal. The soil suspected of containing hydrocarbons exceeded soil cleanup levels was placed back into the excavations. A layer of visqueen was placed over the impacted soil, and clean imported fill was used to restore the excavation area to original grade. GeoEngineers installed nine groundwater monitoring wells in September 2003: GEI-1 through GEI-9.

Current site activities include semi-annual groundwater monitoring and semi-annual to monthly light non-aqueous phase liquid (LNAPL) gauging and removal.

Groundwater Monitoring

The first semi-annual groundwater sampling event was conducted on March 29, 2008, and included monitoring wells GEI-2 through GEI-9. Monitoring well GEI-1 was covered with a bank of snow and ice and therefore was unable to be sampled.

A decontaminated oil-water interface probe was used to gauge the water levels and depth to light non-aqueous phase liquid (LNAPL), if present. Monitoring wells were purged of at least three casing volumes of water using new disposable Teflon bailers. Water quality parameters including temperature, pH and electrical conductivity were measured for each well casing volume and are recorded on groundwater sample field data sheets presented in **Appendix A**. Groundwater samples collected from monitoring wells GEI-2 through GEI-9 were submitted to TestAmerica in Bothell, Washington for analysis of:

- Benzene, toluene, ethylbenzene and total xylenes (BTEX) by EPA Method 8021B;
- Gasoline-range organics (GRO) by Alaska Method AK 101;
- Diesel-range organics (DRO) by Alaska Method AK 102; and
- Residual-range organics (RRO) by Alaska Method AK 103

Due to low water production conditions in monitoring well GEI-2, samples for analysis of DRO and RRO were unable to be collected by the field staff. Samples collected from monitoring wells GEI-6 and GEI-9 were also analyzed for:

- Volatile organic compounds (VOCs) by EPA Method 8260B; and
- Total lead by EPA Method 6010

Samples were collected in clean laboratory supplied containers and submitted to the laboratory under proper chain-of-custody procedures.

Groundwater Flow

Depth to groundwater ranged from 10.08 feet below top of casing (btoc) in monitoring well GEI-4 to 10.77 feet btoc in monitoring well GEI-8. Monitoring wells GEI-5 through GEI-7 and GEI-9 contained measureable LNAPL ranging in thickness from 0.01 feet in GEI-6 to 0.22 feet in GEI-5. Due to the presence of LNAPL, groundwater elevations recorded in monitoring wells GEI-7 through GEI-9 were corrected using the following formula:

Corrected Groundwater Elevation =
(Top of Casing – Depth to Water) + (LNAPL Thickness x 0.8)

Groundwater elevations ranged from 89.18 feet above sea level (asl) in monitoring well GEI-7 to 89.58 feet asl in monitoring wells GEI-3 and GEI-4. The groundwater flow direction was generally to the west and is consistent with historical data. Groundwater elevations and approximate contours based on the March 2008 gauging are included in **Table 1** and **Figure 2**.

Groundwater Analytical Results

Groundwater samples collected during the March 2008 groundwater monitoring event from monitoring wells GEI-3 through GEI-9 exceeded one or more applicable ADEC groundwater cleanup levels (GCLs). Analytical results are included in **Table 2** and **Table 3** and summarized in **Figure 3**. The sample collected from monitoring well GEI-2 did not exceed applicable ADEC GCLs; however, the sample was not analyzed for DRO and RRO due to low water production conditions.

Groundwater samples collected from monitoring wells GEI-7 and GEI-9 exceeded the GRO GCL (1,300 micrograms per liter [µg/L]) with concentrations of 1,630 µg/L and 1,690 µg/L, respectively. Concentrations of DRO exceeded the GCL (1,500 µg/L) in monitoring wells GEI-3 through GEI-9 ranging from 1,860 µg/L in monitoring well GEI-5 to 334,000 µg/L in monitoring well GEI-6. The sample collected from monitoring well GEI-7 exceeded the GCL for RRO (1,100 µg/L) with a concentration of 1,470 µg/L. Concentrations of benzene in monitoring wells GEI-6, GEI-7 and GEI-9 exceeded the GCL (5 µg/L) with concentrations ranging from 7.23 µg/L in monitoring well GEI-9, to 31.1 µg/L in monitoring well GEI-7.

Total lead concentrations in samples collected from monitoring wells GEI-6 and GEI-9 both exceeded the GCL (15 µg/L), with concentrations of 58.8 µg/L and 89.4 µg/L, respectively. Several VOCs were detected in the groundwater samples collected from monitoring wells GEI-6 and GEI-9; however, none of the detected concentrations exceeded the applicable GCLs, with the exception of the aforementioned benzene concentrations.

Laboratory Data Review Summary

As required by ADEC (Technical Memorandum 06-002, dated October 9, 2006), ARCADIS completed a laboratory data review checklist for the TestAmerica laboratory report from the first semi-annual groundwater monitoring event. The laboratory report and the data review checklist are included as **Appendix B**.

The following quality assurance (QA) summary describes six parameters, related to the quality and usability of the data presented in this report.

1. Precision – Based on the laboratory control sample (LCS), matrix spike percent recovery, and laboratory control sample duplicate (LCSD) relative percent differences (RPDs), the TestAmerica data meet precision objectives with the exception of several surrogate recoveries that were below or outside of the laboratory acceptance limits due to matrix effects. A groundwater field duplicate sample was collected from monitoring well GEI-7 and met the RPD limits for water (30%).

2. Accuracy – The TestAmerica data meet accuracy objectives as indicated by the laboratory quality control samples, which were within method/laboratory limits. A trip blank was also collected during groundwater monitoring; the trip blank results were less than the laboratory detection limits.

3. Representativeness – The data appear to be representative of site conditions and are generally consistent with historical groundwater monitoring results.

4. Comparability – Comparability is not applicable to these laboratory results.

5. Completeness – The results appear to be valid and useable, and thus the laboratory results have 100% completeness. However, due to low water

production conditions in monitoring well GEI-2, samples were unable to be collected for DRO and RRO analyses this event.

6. Sensitivity – The sensitivity of the analyses was adequate for the samples as the detection limits were less than the ADEC GCL with the exception of EDB analysis under EPA Method 8260B; the detection limit was greater than the ADEC GCL.

Conclusions and Recommendations

LNAPL was detected in four monitoring wells, GEI-5 through GEI-7 and GEI-9, during the first semi-annual 2008 groundwater monitoring event. LNAPL has been detected in monitoring wells GEI-5 and GEI-6 at least once previously. Historical data does not indicate previous detection or observation of LNAPL in monitoring wells GEI-7 or GEI-9. The LNAPL was identified in 2003 by GeoEngineers, Inc. as a lighter-weight diesel product (i.e. kerosene or jet fuel). DRO is the primary contaminant of concern at the site.

Concentrations of GRO, DRO, RRO, benzene and lead exceeded the applicable ADEC GCLs in the groundwater samples collected during the first semi-annual 2008 event. The current monitoring program also includes the full list of VOCs for monitoring wells GEI-6 and GEI-9 (EPA Method 8260B); however, with the exception of benzene none of the VOCs have been detected at concentrations greater than the cleanup level. Accordingly, ARCADIS recommends eliminating VOCs by EPA Method 8260 (analysis of BTEX by EPA Method 8021B will continue) from the groundwater monitoring program.

Further delineation of the extent of impacted soil and lateral extent of impacted groundwater is scheduled to be completed during the field season of 2008. The next groundwater sampling event is scheduled for fall 2008.

If you have any additional questions or would like to discuss this further, please contact ARCADIS at 206.726.4742.

Sincerely,

ARCADIS

Michael L. Strickler
Geologist I

Greg Montgomery
Project Scientist

Copies:
Dan Carrier, Chevron EMC, Brea, California
Rebekah Cadigan, Fairbanks International Airport, Fairbanks, Alaska

Attachments:

Table 1	Groundwater Elevation Data
Table 2	Summary of Groundwater Analytical Data – Petroleum Hydrocarbons and Lead
Table 3	Summary of Groundwater Analytical Data – Volatile Organic Compounds
Figure 1	Site Location Map
Figure 2	Groundwater Elevation Map – March 29, 2008
Figure 3	Groundwater Analytical Map – March 29, 2008
Appendix A	Groundwater Sampling Field Data Sheets
Appendix B	Laboratory Data Report & ADEC Data Review Checklist

Tables

Table 1

Groundwater Elevation Data
Former Chevron 306443 (Unocal 0207)
Gate 28, West Ramp
Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well	Top of Casing Elevation (feet)	Date	Depth to Water (top of casing) (feet)	Depth to LNAPL (feet)	LNAPL Thickness (feet)	Groundwater Elevation (feet)
GEI-1	99.87	09/04/03	6.32	--	--	93.55
		04/24/04	Well buried under snow/ice			
		09/16/04	8.56	--	--	91.31
		04/21/05	Well buried under snow/ice			
		09/30/05	8.17	--	--	91.70
		04/19/06	Well buried under snow/ice			
		09/21/06	9.04	--	--	90.83
		04/03/07	11.35	11.08	0.27	88.74
		09/29/07	8.60	8.54	0.06	91.32
		10/15/07	**10.35**	**9.94**	**0.41**	**89.86**
		11/19/07	**10.91**	**10.78**	**0.13**	**89.07**
		03/29/08	**Well buried under snow/ice**			
GEI-2	99.79	09/04/03	6.19	--	--	93.60
		04/24/04	Well buried under snow/ice			
		09/16/04	8.47	--	--	91.32
		04/21/05	Well buried under snow/ice			
		09/30/05	7.76	--	--	92.03
		04/19/06	Well buried under snow/ice			
		09/21/06	9.01	--	--	90.78
		04/03/07	Well Dry			
		09/29/07	8.57	--	--	91.22
		03/29/08	**10.22**	**--**	**--**	**89.57**
GEI-3	99.73	09/04/03	6.14	--	--	93.59
		04/24/04	9.49	--	--	90.24
		09/16/04	8.38	--	--	91.35
		04/21/05	9.84	--	--	89.89
		09/30/05	7.67	--	--	92.06
		04/19/06	11.28	10.75	0.53	88.88
		09/21/06	8.91	--	--	90.82
		04/03/07	10.80	10.78	0.02	88.95
		09/29/07	8.47	--	--	91.26
		03/29/08	**10.15**	**--**	**--**	**89.58**
GEI-4	99.66	09/04/03	6.12	--	--	93.54
		04/24/04	9.52	--	--	90.14
		09/16/04	8.41	--	--	91.25
		04/21/05	9.83	--	--	89.83
		09/30/05	7.69	--	--	91.97
		04/19/06	10.90	--	--	88.76
		09/21/06	8.91	--	--	90.75
		04/03/07	10.98	--	--	88.68
		09/29/07	8.44	--	--	91.22
		03/29/08	**10.08**	--	--	**89.58**

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Former Chevron 306443 (Unocal 0207)
Gate 28, West Ramp
Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well	Top of Casing Elevation (feet)	Date	Depth to Water (top of casing) (feet)	Depth to LNAPL (feet)	LNAPL Thickness (feet)	Groundwater Elevation (feet)
GEI-5	99.88	09/04/03	8.28	5.97	2.31	93.49
		04/24/04	10.11	9.71	0.40	90.09
		09/16/04	10.40	8.21	2.19	91.28
		04/21/05	10.49	10.06	0.43	89.74
		09/30/05	7.95	--	--	91.97
		04/19/06	11.75	11.01	0.74	88.74
		09/21/06	10.09	9.01	1.08	90.68
		04/03/07	11.70	11.23	0.47	88.57
		09/29/07	9.22	8.72	0.50	91.07
		03/29/08	**10.67**	**10.45**	**0.22**	**89.39**
GEI-6	99.95	09/04/03	6.47	--	--	93.48
		04/24/04	9.95	--	--	90.00
		09/16/04	8.83	--	--	91.12
		04/21/05	10.28	--	--	89.67
		09/30/05	8.24	--	--	91.71
		04/19/06	Well buried under snow/ice			
		09/21/06	9.30	9.30	<0.1	90.65
		04/03/07	Well Dry			
		09/29/07	9.10	8.81	0.29	91.09
		10/15/07	**10.70**	**10.26**	**0.44**	**89.61**
		11/19/07	**11.04**	**10.71**	**0.33**	**89.18**
		03/29/08	**10.61**	**10.60**	**0.01**	**89.35**
GEI-7	99.44	09/04/03	5.92	--	--	93.52
		04/24/04	9.49	--	--	89.95
		09/16/04	8.36	--	--	91.08
		04/21/05	9.95	--	--	89.49
		09/30/05	7.74	--	--	91.70
		04/19/06	11.04	--	--	88.40
		09/21/06	9.06	--	--	90.38
		04/03/07	11.21	--	--	88.23
		09/29/07	8.59	--	--	90.85
		03/29/08	**10.28**	**10.26**	**0.02**	**89.18**
GEI-8	100.01	09/04/03	6.48	--	--	93.53
		04/24/04	9.94	--	--	90.07
		09/16/04	8.84	--	--	91.17
		04/21/05	10.31	--	--	89.70
		09/30/05	8.18	--	--	91.83
		04/19/06	11.47	--	--	88.54
		09/21/06	9.48	--	--	90.53
		04/03/07	11.63	--	--	88.38
		09/29/07	9.08	--	--	90.93
		03/29/08	**10.77**	--	--	**89.24**

Table 1

Groundwater Elevation Data
Former Chevron 306443 (Unocal 0207)
Gate 28, West Ramp
Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well	Top of Casing Elevation (feet)	Date	Depth to Water (top of casing) (feet)	Depth to LNAPL (feet)	LNAPL Thickness (feet)	Groundwater Elevation (feet)
GEI-9	100.02	09/04/03	6.42	--	--	93.60
		04/24/04	9.82	--	--	90.20
		09/16/04	8.21	--	--	91.81
		04/21/05	Well buried under snow/ice			
		09/30/05	8.14	--	--	91.88
		04/19/06	Well buried under snow/ice			
		09/21/06	9.31	--	--	90.71
		04/03/07	11.39	--	--	88.63
		09/29/07	8.91	--	--	91.11
		03/29/08	**10.73**	**10.65**	**0.08**	**89.36**

Notes:
LNAPL = Light non-aqeous phase liquid
Groundwater elevations were corrected due to the presence of LNAPL in well. Specific gravity of 0.82 was used for the LNAPL (Jet-A Fuel).
Bold text indicates most recent sampling event.
"--" = not applicable.

Table 2

Summary of Groundwater Analytical Data
Petroleum Hydrocarbons and Lead
Former Chevron 306443 (Unocal 0207)
Gate 28, West Ramp
Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well	Date Sampled	GRO	DRO	RRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Lead
GCL:		*1,300*	*1,500*	*1,100*	*5*	*1,000*	*700*	*10,000*	*15*
GEI-1	04/24/04	Well buried by snow/ice							
	09/16/04	1,760	151,000	--	7.05	1.83	47.9	251	--
	09/16/04[D]	--	--	--	5.40	2.02	42.2	233	--
	04/21/05	Well buried by snow/ice							
	09/30/05	2,270	327,000	<3,970	5.52	0.945	36.6	208	--
	04/19/06	Well buried by snow/ice							
	09/21/06	1,300	690,000	<9,800	10.0	0.8	22	140	--
	04/03/07	LNAPL Present - Well not sampled							
	09/29/07	LNAPL Present - Well not sampled							
	03/29/08	**Well buried by snow/ice**							
GEI-2	04/24/04	Well buried by snow/ice							
	09/16/04	76.6	1,430	--	2.53	0.547	<0.500	1.81	--
	04/21/05	Well buried by snow/ice							
	09/30/05	65.6	885	<391	<0.500	<0.500	<0.500	<1.50	--
	04/19/06	Well buried by snow/ice							
	09/21/06	56.0	1,500	430	<0.5	<0.5	<0.5	<1.5	--
	04/03/07	Well dry - Not sampled							
	09/29/07	30	--	--	<1	<1	<1	<2	--
	03/29/08	**<50.0**	**--[3]**	**--[3]**	**<0.500**	**<0.500**	**<0.500**	**<1.00**	
GEI-3	04/24/04	1,330	21,000	--	<5.00	<5.00	13.9	59.8	--
	09/16/04	310	18,300	--	1.26	<0.500	8.27	14.9	--
	04/21/05	464	22,900	--	<0.500	<0.500	6.24	14.6	--
	09/30/05	450	33,300	625	<0.500	<0.500	3.45	10.6	--
	04/19/06	LNAPL Present - Well not sampled							
	09/21/06	500	29,000	<480	<0.6	<0.5	7.7	25.0	--
	04/03/07	LNAPL Present - Well not sampled							
	09/29/07	700	65,000	<2,100	<5	<5	<5	<20	--
	03/29/08	**492**	**47,100 [2]**	**863**	**<0.500**	**<0.500**	**5.01**	**16.0**	
GEI-4	04/24/04	1,270	43,600	--	<5.00	<5.00	14.6	57.2	--
	09/16/04	638	36,200	--	15.0	0.675	21.8	35.7	--
	04/21/05	570	37,500	--	35.4	1.27	17.7	40.1	--
	09/30/05	1,030	122,000	<4,100	7.47	4.88	25.1	58.7	--
	04/19/06	879	17,800	<391	7.58	<0.500	21.8	27.9	<1.00
	09/21/06	630	12,000	<480	24.0	0.5	25	43	--
	04/03/07	300	2,000	<40	5.0	<1.0	9	8	--
	09/29/07	1,400	43,000	<2,000	20	1	20	40	--
	03/29/08	**255 [1]**	**11,300 [2]**	**<735**	**2.17**	**<0.500**	**4.16**	**9.20**	
GEI-5	04/24/04	LNAPL Present - Well not sampled							
	09/16/04	LNAPL Present - Well not sampled							
	04/21/05	LNAPL Present - Well not sampled							
	09/30/05	2,530	671,000	<8,700	12.4	<0.500	107	326	--
	04/19/06	LNAPL Present - Well not sampled							
	09/21/06	LNAPL Present - Well not sampled							
	04/03/07	LNAPL Present - Well not sampled							
	09/29/07	LNAPL Present - Well not sampled							
	03/29/08	**68.1**	**1,860 [2]**	**<708**	**<0.500**	**<0.500**	**<0.500**	**1.78**	

Table 2

Summary of Groundwater Analytical Data
Petroleum Hydrocarbons and Lead
Former Chevron 306443 (Unocal 0207)
Gate 28, West Ramp
Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well	Date Sampled	GRO	DRO	RRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Lead
GCL:		*1,300*	*1,500*	*1,100*	*5*	*1,000*	*700*	*10,000*	*15*
GEI-6	04/24/04	2,930	168,000	--	8.17	<5.00	59.6	145	--
	09/16/04	1,880	39,600	--	7.80	1.57	23.8	75.0	--
	04/21/05	1,290	25,300	--	15.7	<0.500	57.1	134	--
	09/30/05	2,220	120,000	<4,770	14.8	<0.500	20.8	107	--
	04/19/06	Well buried by snow/ice							
	09/21/06	LNAPL Present - Well not sampled							
	04/03/07	Well Dry - Not sampled							
	09/29/07	LNAPL Present - Well not sampled							
	03/29/08	**1,170 [1]**	**334,000 [2]**	**904**	**8.41**	**<2.50**	**33.8**	**128**	**58.8**
GEI-7	04/24/04	2,440	43,200	--	6.97	<5.00	7.58	20.0	--
	09/16/04	363	5,660	--	<0.500	1.34	8.89	14.2	--
	04/21/05	1,080	13,600	--	32.6	2.52	64.6	92.0	--
	09/30/05	226	6,700	<397	<0.500	<0.500	3.68	4.72	--
	04/19/06	934	25,200	<856	37.9	4.11	77.8	103	<1.00
	09/21/06	470	4,100	<98	1.2	<0.5	14	15	--
	04/03/07	2,200	12,000	<980	50	4	90	200	--
	04/03/07[D]	2,200	12,000	<980	40	4	90	200	--
	09/29/07	1,500	130,000	<2,000	<5	<5	<10	<20	27.9
	09/29/07[D]	900	92,000	<2,000	<5	<5	<10	<20	--
	03/29/08	**1,630 [1]**	**44,200**	**1,320**	**31.1**	**<5.00**	**90.5**	**147**	
	03/29/08[D]	**1,630**	**51,400**	**1,470**	**26.8**	**<5.00**	**85.2**	**131**	
GEI-8	04/24/04	<500	7,390	--	<5.00	<5.00	11.7	30.4	--
	09/16/04	82	8,690	--	<0.500	<0.500	0.520	1.12	--
	04/21/05	54.3	1,460	--	<0.500	<0.500	<0.500	<1.50	--
	04/21/05[D]	<50	--	--	<0.500	<0.500	<0.500	<1.50	--
	09/30/05	<50	4,970	<397	<0.500	<0.500	<0.500	<1.50	--
	04/19/06	<50	1,480	<400	<0.500	<0.500	<0.500	<1.50	--
	04/19/06[D]	78.0	--	--	<0.500	<0.500	<0.500	<1.50	<1.00
	09/21/06	40.0	1,800	<160	<0.5	<0.5	<0.5	<1.5	--
	04/03/07	60	910	360	<1.0	<1.0	<1.0	<2.0	--
	09/29/07	80	4,400	<200	<1.0	<1.0	<1.0	<2.0	--
	03/29/08	**62.0 [1]**	**2,830 [2]**	**<758**	**<0.500**	**<0.500**	**<0.500**	**1.94**	
GEI-9	04/24/04	8,370	33,700	--	9.53	<5.00	113	321	--
	09/16/04	1,350	77,400	--	17.3	<0.500	58.3	57.5	--
	04/21/05	Well buried by snow/ice							
	09/30/05	838	50,900	<443	16.2	<0.500	55.4	82.3	--
	04/19/06	Well buried by snow/ice							
	09/21/06	1,200	95,000	<1,900	23.0	<0.5	52	80	36.5
	09/21/06[D]	1,300	43,000	<980	22.0	<0.5	50	75	--
	04/03/07	1,600	9,700	<400	6	<1.0	40	80	0.62
	09/29/07	1,800	680,000	<20,000	10	<5	40	70	29.8
	03/29/08	**1,690 [1]**	**111,000 [2]**	**839**	**7.23**	**<5.00**	**25.1**	**85.5**	**89.4**

Table 2

Summary of Groundwater Analytical Data
Petroleum Hydrocarbons and Lead
Former Chevron 306443 (Unocal 0207)
Gate 28, West Ramp
Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well	Date Sampled	GRO	DRO	RRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Lead
GCL:		***1,300***	***1,500***	***1,100***	***5***	***1,000***	***700***	***10,000***	***15***
Trip Blank	09/21/06	<10	--	--	<0.5	<0.5	<0.5	<1.5	--
	04/03/07	<10	--	--	<0.5	<0.5	<0.5	<0.5	--
	09/29/07	<10	--	--	<1	<1	<1	<2	--
	03/29/08	**<50.0**	**--**	**--**	**<0.500**	**<0.500**	**<0.500**	**<1.00**	**--**

Notes:
All results are reported in micrograms per liter (ug/l)
GCL = ADEC 18 AAC 75 Groundwater Cleanup Level
[D] - duplicate of preceding sample
[1]Detected hydrocarbons in the gasoline range appear to be due to overlap of diesel range hydrocarbons.
[2]Hydrocarbon pattern most closely resembles kerosene.
[3]Insufficient water to collect sample.
Highlighted cell= exceeds GCL
Bold Type indicates most recent sampling event.
-- = sample was not analyzed for this compound
<25 = result did not exceed indicated method reporting limit; an elevated reporting limit indicates sample was diluted

Table 3

Summary of Groundwater Analytical Data
Volatile Organic Compounds
Former Chevron 306443 (Unocal 0207)
Gate 28, West Ramp
Fairbanks International Airport
Fairbanks, Alaska

EPA Method:		8011	8260B																8021B
Well	Sample Date	1,2-dibromoethane	1,2-dibromoethane	1,1-dichloroethane	1,3,5-Trimethylbenzene	1,1,1-trichloroethane	1,2,4-Trimethylbenzene	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	p-Isopropyltoluene	Isopropylbenzene	n-Propylbenzene	tetrachloroethene	1,2-dichloroethane	trichloroethene	naphthalene	methyl tertiary butyl ether	methyl tertiary butyl ether
GCL:		*0.05*	*0.05*	*3,650*	*1,850*	*200*	*1,850*	*NL*	*NL*	*NL*	*NL*	*3,650*	*NL*	*5*	*5*	*5*	*700*	*NL*	*NL*
GEI-6	**03/29/08**	**--**	**<1.00**	**<1.00**	**86.8**	**<1.00**	**187**	**6.37**	**5.08**	**1.80**	**13.6**	**6.04**	**5.83**	**<1.00**	**<1.00**	**<1.00**	**130**	**<2.00**	**--**
GEI-7	09/29/07	--	<0.5	<1	62	<0.8	170	28	27	2	22	22	41	<0.8	<0.5	<1	150	<0.5	--
GEI-9	09/21/06	<0.0098	<0.5	<1	120	<0.8	540	36	17	1	17	25	59	<0.8	<0.5	<1	--	<0.5	<2.5
	04/03/07	--	<0.5	<1	100	<0.8	340	35	23	2	20	30	65	<0.8	<0.5	<1	--	<0.5	--
	09/29/07	--	<0.5	<1	120	<0.8	630	31	16	1	18	21	47	<0.8	<0.5	<1	100	<0.5	--
	03/29/08	**--**	**<1.00**	**<1.00**	**69.9**	**<1.00**	**169**	**21.1**	**11.2**	**1.47**	**13.0**	**20.3**	**31.8**	**<1.00**	**<1.00**	**<1.00**	**95.1**	**<2.00**	**--**
Trip Blank	04/03/07	--	<0.5	<1	<1	<0.8	<1	<1	<1	<1	<1	<1	<1	<0.8	<0.5	<1	--	<0.5	--
	09/29/07	--	<0.5	<1	<1	<0.8	<1	<1	<1	<1	<1	<1	<1	<0.8	<0.5	<1	<1	<0.5	--

Notes:
All results are reported in micrograms per liter (ug/l)
GCL = ADEC 18 AAC 75 Groundwater Cleanup Level
NL = No GCL available
-- = not analyzed for this compound or data is not available
<25 = result did not exceed indicated method reporting limit; an elevated reporting limit indicates sample was diluted

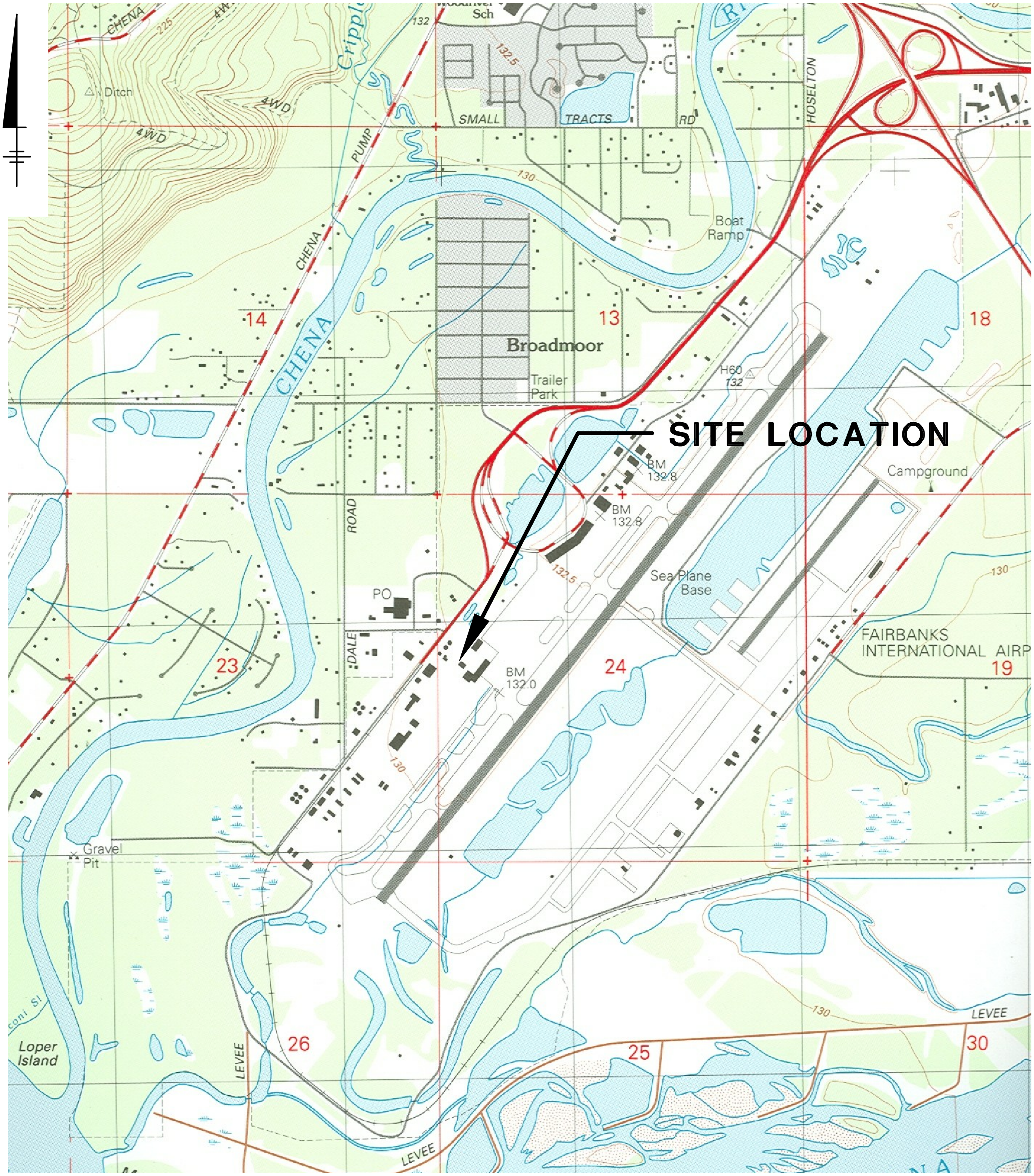
Table 4

Summary of Groundwater Analytical Data
Polycyclic Aromatic Hydrocarbons
Former Unocal Bulk Plant
Gate 28, West Ramp
Fairbanks International Airport
Fairbanks, Alaska

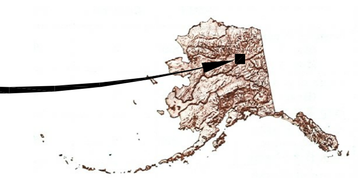
Well	Sample Date	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene
GCL:		**700**	**2,200**	**2,200**	**1,460**	**11,000**	**11,000**	**1,460**	**1,100**	**1**	**100**	**1**	**10**	**0.2**	**1**	**0.1**	**1,100**
GEI-9	09/19/06	180	<1	2.0	9.0	3.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trip Blank																	

Notes:
All results are reported in micrograms per liter (ug/l)
PAH = Polycyclic Aromatic Hydrocarbons; analyzed using EPA Method 827C
GCL = ADEC 18 AAC 75 Groundwater Cleanup Level
-- = sample was not analyzed for this compound
<1 = result did not exceed indicated method reporting limit; an elevated reporting limit indicates sample was dilutec

Figures



SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE: FAIRBANKS (D−2) SW, AK., 1992, FAIRBANKS NORTH STAR BOROUGH, SECTION: 24, TOWNSHIP: 1S, RANGE: 2W



0 2000' 4000'

APPROXIMATE GRAPHIC SCALE

CHEVRON #306443 (FORMER UNOCAL BULK PLANT)
GATE 28, WEST RAMP, FAIRBANKS AIRPORT, FAIRBANKS, AK.

GROUNDWATER MONITORING REPORT

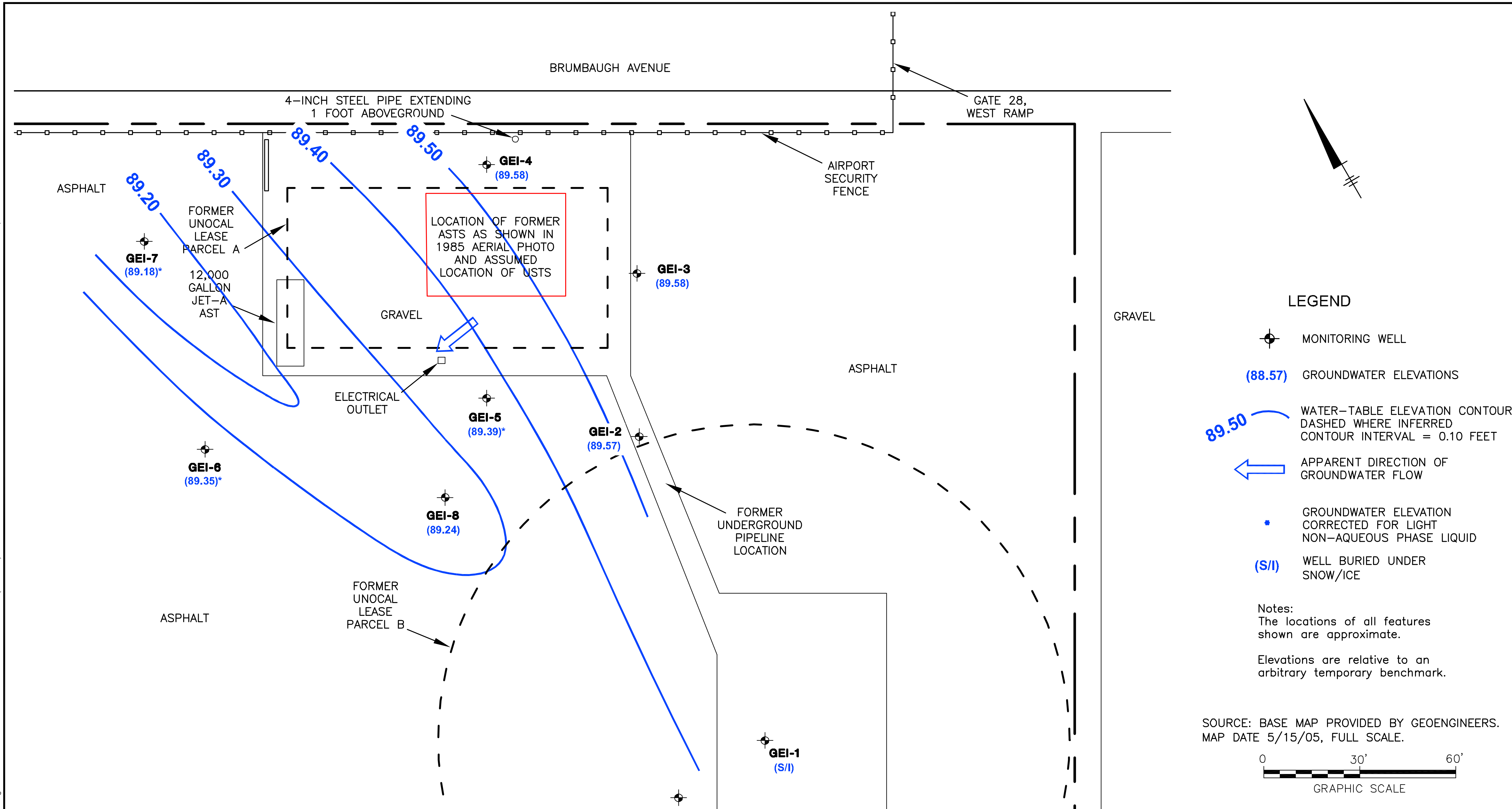
SITE LOCATION MAP

ARCADIS

FIGURE 1

CITY:TMAPA,FL DIV/GROUP:85 DB:JAR LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
I:\YR_2008\B0045507\0001\00001\1SAGMR08\45507N01.dwg LAYOUT: 1 SAVED: 5/7/2008 1:40 PM ACADVER: 17.0S (LMS TECH) PAGESETUP: PDF-AP PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 5/29/2008 2:07 PM BY: RICHARDS, JIM

XREFS: IMAGES: ALASKA.jpg FAIRBANKS-SW.jpg PROJECTNAME: ----

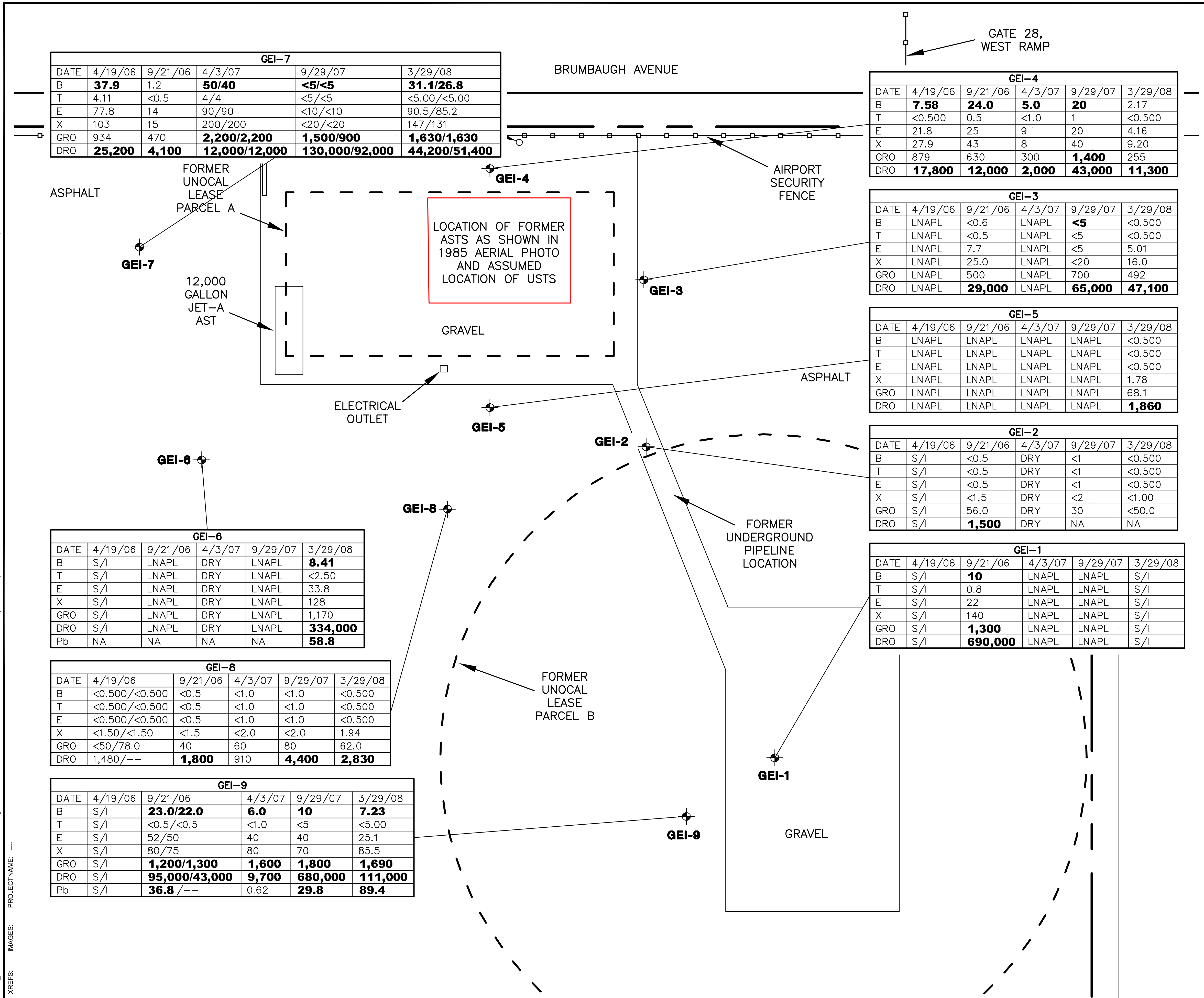


CHEVRON #306443 (FORMER UNOCAL BULK PLANT)
GATE 28, WEST RAMP, FAIRBANKS AIRPORT, FAIRBANKS, AK.
GROUNDWATER MONITORING REPORT

GROUNDWATER ELEVATION MAP
MARCH 29, 2008

ARCADIS

FIGURE
2



GEI–7

DATE	4/19/06	9/21/06	4/3/07	9/29/07	3/29/08
B	**37.9**	1.2	**50/40**	**<5/<5**	**31.1/26.8**
T	4.11	<0.5	4/4	<5/<5	<5.00/<5.00
E	77.8	14	90/90	<10/<10	90.5/85.2
X	103	15	200/200	<20/<20	147/131
GRO	934	470	**2,200/2,200**	**1,500/900**	**1,630/1,630**
DRO	**25,200**	**4,100**	**12,000/12,000**	**130,000/92,000**	**44,200/51,400**

GEI–4

DATE	4/19/06	9/21/06	4/3/07	9/29/07	3/29/08
B	**7.58**	**24.0**	**5.0**	**20**	2.17
T	<0.500	0.5	<1.0	1	<0.500
E	21.8	25	9	20	4.16
X	27.9	43	8	40	9.20
GRO	879	630	300	**1,400**	255
DRO	**17,800**	**12,000**	**2,000**	**43,000**	**11,300**

GEI–3

DATE	4/19/06	9/21/06	4/3/07	9/29/07	3/29/08
B	LNAPL	<0.6	LNAPL	**<5**	<0.500
T	LNAPL	<0.5	LNAPL	<5	<0.500
E	LNAPL	7.7	LNAPL	<5	5.01
X	LNAPL	25.0	LNAPL	<20	16.0
GRO	LNAPL	500	LNAPL	700	492
DRO	LNAPL	**29,000**	LNAPL	**65,000**	**47,100**

GEI–5

DATE	4/19/06	9/21/06	4/3/07	9/29/07	3/29/08
B	LNAPL	LNAPL	LNAPL	LNAPL	<0.500
T	LNAPL	LNAPL	LNAPL	LNAPL	<0.500
E	LNAPL	LNAPL	LNAPL	LNAPL	<0.500
X	LNAPL	LNAPL	LNAPL	LNAPL	1.78
GRO	LNAPL	LNAPL	LNAPL	LNAPL	68.1
DRO	LNAPL	LNAPL	LNAPL	LNAPL	**1,860**

GEI–2

DATE	4/19/06	9/21/06	4/3/07	9/29/07	3/29/08
B	S/I	<0.5	DRY	<1	<0.500
T	S/I	<0.5	DRY	<1	<0.500
E	S/I	<0.5	DRY	<1	<0.500
X	S/I	<1.5	DRY	<2	<1.00
GRO	S/I	56.0	DRY	30	<50.0
DRO	S/I	**1,500**	DRY	NA	NA

GEI–1

DATE	4/19/06	9/21/06	4/3/07	9/29/07	3/29/08
B	S/I	**10**	LNAPL	LNAPL	S/I
T	S/I	0.8	LNAPL	LNAPL	S/I
E	S/I	22	LNAPL	LNAPL	S/I
X	S/I	140	LNAPL	LNAPL	S/I
GRO	S/I	**1,300**	LNAPL	LNAPL	S/I
DRO	S/I	**690,000**	LNAPL	LNAPL	S/I

GEI–6

DATE	4/19/06	9/21/06	4/3/07	9/29/07	3/29/08
B	S/I	LNAPL	DRY	LNAPL	**8.41**
T	S/I	LNAPL	DRY	LNAPL	<2.50
E	S/I	LNAPL	DRY	LNAPL	33.8
X	S/I	LNAPL	DRY	LNAPL	128
GRO	S/I	LNAPL	DRY	LNAPL	1,170
DRO	S/I	LNAPL	DRY	LNAPL	**334,000**
Pb	NA	NA	NA	NA	**58.8**

GEI–8

DATE	4/19/06	9/21/06	4/3/07	9/29/07	3/29/08
B	<0.500/<0.500	<0.5	<1.0	<1.0	<0.500
T	<0.500/<0.500	<0.5	<1.0	<1.0	<0.500
E	<0.500/<0.500	<0.5	<1.0	<1.0	<0.500
X	<1.50/<1.50	<1.5	<2.0	<2.0	1.94
GRO	<50/78.0	40	60	80	62.0
DRO	1,480/––	**1,800**	910	**4,400**	**2,830**

GEI–9

DATE	4/19/06	9/21/06	4/3/07	9/29/07	3/29/08
B	S/I	**23.0/22.0**	**6.0**	**10**	**7.23**
T	S/I	<0.5/<0.5	<1.0	<5	<5.00
E	S/I	52/50	40	40	25.1
X	S/I	80/75	80	70	85.5
GRO	S/I	**1,200/1,300**	**1,600**	**1,800**	**1,690**
DRO	S/I	**95,000/43,000**	**9,700**	**680,000**	**111,000**
Pb	S/I	**36.8**/––	0.62	**29.8**	**89.4**

LEGEND

MONITORING WELL

SAMPLE LOCATION	
DATE	SAMPLE DATE
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	XYLENES
GRO	GASOLINE RANGE ORGANICS
DRO	DIESEL RANGE ORGANICS
Pb	LEAD

RESULTS REPORTED IN MICROGRAMS PER LITER (µg/L)

S/I = SNOW/ICE

NA = NOT ANALYZED

25/30 = DUPLICATE SAMPLE

–– = DUPLICATE NOT SAMPLED

LNAPL = LIGHT NON–AQUEOUS PHASE LIQUID

BOLD CELL = EXCEEDS GCL

Notes:
The locations of all features shown are approximate.

SOURCE: BASE MAP PROVIDED BY GEOENGINEERS. MAP DATE 5/15/05, FULL SCALE.

0 30' 60'
GRAPHIC SCALE

CHEVRON #306443 (FORMER UNOCAL BULK PLANT)
GATE 28, WEST RAMP, FAIRBANKS AIRPORT, FAIRBANKS, AK.
GROUNDWATER MONITORING REPORT

GROUNDWATER ANALYTICAL MAP
MARCH 29, 2008

ARCADIS

FIGURE
3

ARCADIS

Appendix A

Groundwater Sampling Field Data Sheets

GROUNDWATER SAMPLE DATA SHEET

Project Number: 45507
Sample Location (ie. MW-1): GEI-1
Project Name: FIA West Ramp/Gate 28
Sample ID (ie. MW-1-W-yymmdd):
Client: ARCADIS
Date Sample Collected: 3/29/2008
Sampler: Hannah, Weller, Strickler
Time sampled:

Well Information

Groundwater: X
Casing Diameter (in): 2
a) Well Depth (ft):
b) Water Depth (ft):
Other:
c) Water Column (ft):
d) Calc. Purge Vol. (gal):

Calculating Purge Volume

Well Casing Diameter	Multiply c) by:
2	0.16
4	0.65
6	1.47

Sand Pack Diameter	Multiply c) by:
8	0.71
10	1
12	1.28

Note: assuming sand pack has 29% porosity

Example 1- purging only well casing volume
2-inch casing and 6-foot water column
One Purge Volume= 0.16 X 6 = 0.96 gallons water

Example 2- purging well casing and sand pack volume
2-inch casing, 8-inch sand pack, and 6-foot water column
One Purge Volume= (0.16 X 6) + (0.71 X 6) = 5.22 gallons water

FIELD MEASUREMENTS

Time	Volume (gallons)	pH	Conductivity (mS)	Temperature (C)	Color	Turbidity	Redox	Dissolved O_2	Other

Total Volume Purged (Gallons):
Free Product (y/n):
Odor:
Sheen (y/n):

Purge Method (disposable bailer, teflon bailer, submersible pump, etc.)

Sample Method (disposable bailer, teflon bailer, submersible pump, etc.)

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.)

Remarks (well recovery, unusual conditions/observations):
Did not try to locate well under massive snow pile

Duplicate Sample ID:
Split Sample ID:
Analyses Requested: GRO/BTEX/DRO/RRO

Signed: Hannah, Weller, Strickler
Date: 3/29/2008

Signed/reviewer:
Date:

GROUNDWATER SAMPLE DATA SHEET

Project Number:	45507	Sample Location (ie. MW-1):	GEI-2
Project Name:	FIA West Ramp/Gate 28	Sample ID (ie. MW-1-W-yymmdd):	GEI-2-W-080329
Client:	ARCADIS	Date Sample Collected:	3/29/2008
Sampler:	Hannah, Weller, Strickler	Time sampled:	1630

Well Information

Groundwater:	X	Casing Diameter (in):	2	a) Well Depth (ft):	10.6
				b) Water Depth (ft):	10.22
Other:				c) Water Column (ft):	0.38
				d) Calc. Purge Vol. (gal):	0.1

Calculating Purge Volume

Well Casing Diameter	Multiply c) by:
2	0.16
4	0.65
6	1.47

Sand Pack Diameter	Multiply c) by:
8	0.71
10	1
12	1.28

Note: assuming sand pack has 29% porosity

Example 1- purging only well casing volume
2-inch casing and 6-foot water column
One Purge Volume= 0.16 X 6 = 0.96 gallons water

Example 2- purging well casing and sand pack volume
2-inch casing, 8-inch sand pack, and 6-foot water column
One Purge Volume= (0.16 X 6) + (0.71 X 6) = 5.22 gallons water

FIELD MEASUREMENTS

Time	Volume (gallons)	pH	Conductivity (mS)	Temperature (C)	Color	Turbidity	Redox	Dissolved O_2	Other

Total Volume Purged (Gallons):
Free Product (y/n):
Odor:
Sheen (y/n):

Purge Method (disposable bailer, teflon bailer, submersible pump, etc.)
teflon bailer

Sample Method (disposable bailer, teflon bailer, submersible pump, etc.)
teflon bailer

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.)

Remarks (well recovery, unusual conditions/observations):
PID 0.0 ppm, very low water column, no measurements were taken, no DRO/RRO samples were taken

Duplicate Sample ID:
Split Sample ID:
Analyses Requested: GRO/BTEX

Signed: Hannah, Weller, Strickler
Date: 3/29/2008

Signed/reviewer:
Date:

GROUNDWATER SAMPLE DATA SHEET

Project Number:	45507	Sample Location (ie. MW-1):	GEI-3
Project Name:	FIA West Ramp/Gate 28	Sample ID (ie. MW-1-W-yymmdd):	GEI-3-W-080329
Client:	ARCADIS	Date Sample Collected:	3/29/2008
Sampler:	Hannah, Weller, Strickler	Time sampled:	1700

Well Information

Groundwater:	X	Casing Diameter (in):	2	a) Well Depth (ft):	11.4
				b) Water Depth (ft):	10.15
Other:				c) Water Column (ft):	1.25
				d) Calc. Purge Vol. (gal):	0.2

Calculating Purge Volume

Well Casing Diameter	Multiply c) by:
2	0.16
4	0.65
6	1.47

Sand Pack Diameter	Multiply c) by:
8	0.71
10	1
12	1.28

Note: assuming sand pack has 29% porosity

Example 1- purging only well casing volume
2-inch casing and 6-foot water column
One Purge Volume= 0.16 X 6 = 0.96 gallons water

Example 2- purging well casing and sand pack volume
2-inch casing, 8-inch sand pack, and 6-foot water column
One Purge Volume= (0.16 X 6) + (0.71 X 6) = 5.22 gallons water

FIELD MEASUREMENTS

Time	Volume (gallons)	pH	Conductivity (mS)	Temperature (C)	Color	Turbidity	Redox	Dissolved O_2	Other
1645	0.4	6.93	0.328	3.3	grey				
1646	0.7	6.70	0.619	3.1	grey				
1647	1.1	6.66	0.601	3.2	grey				
1648	1.5	6.62	0.625	3.04	grey				

Total Volume Purged (Gallons): 1.5 Free Product (y/n):
Odor: Sheen (y/n):

Purge Method (disposable bailer, teflon bailer, submersible pump, etc.)
teflon bailer

Sample Method (disposable bailer, teflon bailer, submersible pump, etc.)
teflon bailer

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.)

Remarks (well recovery, unusual conditions/observations):
PID 27.80 ppm

Duplicate Sample ID: Analyses Requested: GRO/BTEX/DRO/RRO
Split Sample ID:

Signed: Hannah, Weller, Strickler Date: 3/29/2008

Signed/reviewer: Date:

GROUNDWATER SAMPLE DATA SHEET

Project Number:	45507	Sample Location (ie. MW-1):	GEI-4
Project Name:	FIA West Ramp/Gate 28	Sample ID (ie. MW-1-W-yymmdd):	GEI-4-W-080329
Client:	ARCADIS	Date Sample Collected:	3/29/2008
Sampler:	Hannah, Weller, Strickler	Time sampled:	1615

Well Information

Groundwater:	X	Casing Diameter (in):	2	a) Well Depth (ft):	12.57
				b) Water Depth (ft):	10.08
Other:				c) Water Column (ft):	2.5
				d) Calc. Purge Vol. (gal):	0.4

Calculating Purge Volume

Well Casing Diameter	Multiply c) by:
2	0.16
4	0.65
6	1.47

Example 1- purging only well casing volume
2-inch casing and 6-foot water column
One Purge Volume= 0.16 X 6 = 0.96 gallons water

Sand Pack Diameter	Multiply c) by:
8	0.71
10	1
12	1.28

Note: assuming sand pack has 29% porosity

Example 2- purging well casing and sand pack volume
2-inch casing, 8-inch sand pack, and 6-foot water column
One Purge Volume= (0.16 X 6) + (0.71 X 6) = 5.22 gallons water

FIELD MEASUREMENTS

Time	Volume (gallons)	pH	Conductivity (mS)	Temperature (C)	Color	Turbidity	Redox	Dissolved O_2	Other
1600	0.5	6.49	0.539	2.8	light grey				
1602	1	6.50	0.537	2.8	light grey				
1605	1.5	6.52	0.528	2.8	light grey				

Total Volume Purged (Gallons): 1.5 Free Product (y/n):
Odor: Sheen (y/n):

Purge Method (disposable bailer, teflon bailer, submersible pump, etc.)
teflon bailer

Sample Method (disposable bailer, teflon bailer, submersible pump, etc.)
teflon bailer

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.)

Remarks (well recovery, unusual conditions/observations):
PID 22.90 ppm

Duplicate Sample ID:
Split Sample ID:

Analyses Requested: GRO/BTEX/DRO/RRO

Signed: Hannah, Weller, Strickler Date: 3/29/2008

Signed/reviewer: Date:

GROUNDWATER SAMPLE DATA SHEET

Project Number:	45507	Sample Location (ie. MW-1):	GEI-5
Project Name:	FIA West Ramp/Gate 28	Sample ID (ie. MW-1-W-yymmdd):	GEI-5-W080329
Client:	ARCADIS	Date Sample Collected:	3/29/2008
Sampler:	Hannah, Weller, Strickler	Time sampled:	1800

Well Information

Groundwater:	X	Casing Diameter (in):	2	a) Well Depth (ft):	11.85
				b) Water Depth (ft):	10.67
Other:	**DTP 10.45'**			c) Water Column (ft):	1.18
				d) Calc. Purge Vol. (gal):	0.2

Calculating Purge Volume

Well Casing Diameter	Multiply c) by:
2	0.16
4	0.65
6	1.47

Sand Pack Diameter	Multiply c) by:
8	0.71
10	1
12	1.28

Note: assuming sand pack has 29% porosity

Example 1- purging only well casing volume
2-inch casing and 6-foot water column
One Purge Volume= 0.16 X 6 = 0.96 gallons water

Example 2- purging well casing and sand pack volume
2-inch casing, 8-inch sand pack, and 6-foot water column
One Purge Volume= (0.16 X 6) + (0.71 X 6) = 5.22 gallons water

FIELD MEASUREMENTS

Time	Volume (gallons)	pH	Conductivity (mS)	Temperature (C)	Color	Turbidity	Redox	Dissolved O_2	Other
1750	0.5	6.56	0.531	3.1	grey				
1752	1	6.53	0.52	2.9	grey				
1755	1.5	6.55	0.504	2.8	grey				

Total Volume Purged (Gallons): 1.5
Free Product (y/n):
Odor:
Sheen (y/n):

Purge Method (disposable bailer, teflon bailer, submersible pump, etc.)
teflon bailer

Sample Method (disposable bailer, teflon bailer, submersible pump, etc.)
teflon bailer

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.)

Remarks (well recovery, unusual conditions/observations):
PID 48 ppm, No visible product while purging

Duplicate Sample ID:
Split Sample ID:
Analyses Requested: GRO/BTEX/DRO/RRO

Signed: Hannah, Weller, Strickler
Date: 3/29/2008

Signed/reviewer:
Date:

GROUNDWATER SAMPLE DATA SHEET

Project Number:	45507	Sample Location (ie. MW-1):	GEI-6
Project Name:	FIA West Ramp/Gate 28	Sample ID (ie. MW-1-W-yymmdd):	GEI-6-W-080329
Client:	ARCADIS	Date Sample Collected:	3/29/2008
Sampler:	Hannah, Weller, Strickler	Time sampled:	1715

Well Information

Groundwater:	X	Casing Diameter (in):	2	a) Well Depth (ft):	11.05
				b) Water Depth (ft):	10.61
Other:	**DTP 10.60'**			c) Water Column (ft):	0.44
				d) Calc. Purge Vol. (gal):	0.1

Calculating Purge Volume

Well Casing Diameter	Multiply c) by:
2	0.16
4	0.64
6	1.47

Sand Pack Diameter	Multiply c) by:
8	0.71
10	1
12	1.28

Note: assuming sand pack has 29% porosity

Example 1- purging only well casing volume
2-inch casing and 6-foot water column
One Purge Volume= 0.16 X 6 = 0.96 gallons water

Example 2- purging well casing and sand pack volume
2-inch casing, 8-inch sand pack, and 6-foot water column
One Purge Volume= (0.16 X 6) + (0.71 X 6) = 5.22 gallons water

FIELD MEASUREMENTS

Time	Volume (gallons)	pH	Conductivity (mS)	Temperature (C)	Color	Turbidity	Redox	Dissolved O_2	Other

Total Volume Purged (Gallons): ______ Free Product (y/n): Yes

Odor: Sheen (y/n):

Purge Method (disposable bailer, teflon bailer, submersible pump, etc.)
teflon bailer

Sample Method (disposable bailer, teflon bailer, submersible pump, etc.)
teflon bailer

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.)

Remarks (well recovery, unusual conditions/observations):
PID 88.6 ppm, low water column, no field measurements

Duplicate Sample ID:
Split Sample ID:

Analyses Requested: GRO/BTEX/DRO/RRO
lead/VOC's

Signed: Hannah, Weller, Strickler Date: 3/29/2008

Signed/reviewer: Date:

GROUNDWATER SAMPLE DATA SHEET

Project Number:	45507	Sample Location (ie. MW-1):	GEI-7
Project Name:	FIA West Ramp/Gate 28	Sample ID (ie. MW-1-W-yymmdd):	GEI-7-W-080329
Client:	ARCADIS	Date Sample Collected:	3/29/2008
Sampler:	Hannah, Weller, Strickler	Time sampled:	1545

Well Information

Groundwater:	X	Casing Diameter (in):	2	a) Well Depth (ft):	13.22
				b) Water Depth (ft):	10.28
Other:	**DTP 10.26'**			c) Water Column (ft):	2.94
				d) Calc. Purge Vol. (gal):	0.5

Calculating Purge Volume

Well Casing Diameter	Multiply c) by:
2	0.16
4	0.65
6	1.47

Sand Pack Diameter	Multiply c) by:
8	0.71
10	1
12	1.28

Note: assuming sand pack has 29% porosity

Example 1- purging only well casing volume
2-inch casing and 6-foot water column
One Purge Volume= 0.16 X 6 = 0.96 gallons water

Example 2- purging well casing and sand pack volume
2-inch casing, 8-inch sand pack, and 6-foot water column
One Purge Volume= (0.16 X 6) + (0.71 X 6) = 5.22 gallons water

FIELD MEASUREMENTS

Time	Volume (gallons)	pH	Conductivity (mS)	Temperature (C)	Color	Turbidity	Redox	Dissolved O_2	Other
1518	0.5	6.56	0.660	3.0	light grey				
1523	1.2	6.57	0.65	3.0	light grey				
1525	2	6.52	0.664	3.0	light grey				

Total Volume Purged (Gallons): 2   Free Product (y/n):

Odor: Sheen (y/n):

Purge Method (disposable bailer, teflon bailer, submersible pump, etc.)
teflon bailer

Sample Method (disposable bailer, teflon bailer, submersible pump, etc.)
teflon bailer

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.)

Remarks (well recovery, unusual conditions/observations):
PID 7.7 ppm

Duplicate Sample ID: DUP-1-W-080329   Analyses Requested: GRO/BTEX/DRO/RRO

Split Sample ID:

Signed: Hannah, Weller, Strickler   Date: 3/29/2008

Signed/reviewer: Date:

GROUNDWATER SAMPLE DATA SHEET

Project Number:	45507	Sample Location (ie. MW-1):	GEI-8
Project Name:	FIA West Ramp/Gate 28	Sample ID (ie. MW-1-W-yymmdd):	GEI-8-W-080329
Client:	ARCADIS	Date Sample Collected:	3/29/2008
Sampler:	Hannah, Weller, Strickler	Time sampled:	1515

Well Information

Groundwater:	X	Casing Diameter (in):	2	a) Well Depth (ft):	12.9
				b) Water Depth (ft):	10.77
Other:				c) Water Column (ft):	2.13
				d) Calc. Purge Vol. (gal):	0.3

Calculating Purge Volume

Well Casing Diameter	Multiply c) by:
2	0.16
4	0.65
6	1.47

Sand Pack Diameter	Multiply c) by:
8	0.71
10	1
12	1.28

Note: assuming sand pack has 29% porosity

Example 1- purging only well casing volume
2-inch casing and 6-foot water column
One Purge Volume= 0.16 X 6 = 0.96 gallons water

Example 2- purging well casing and sand pack volume
2-inch casing, 8-inch sand pack, and 6-foot water column
One Purge Volume= (0.16 X 6) + (0.71 X 6) = 5.22 gallons water

FIELD MEASUREMENTS

Time	Volume (gallons)	pH	Conductivity (mS)	Temperature (C)	Color	Turbidity	Redox	Dissolved O_2	Other
1455	0.5	6.96	0.551	2.8					
1500	1	6.81	0.547	2.8					
1501	1.5	6.79	0.541	2.8					

Total Volume Purged (Gallons): 1.5
Free Product (y/n):
Odor:
Sheen (y/n):

Purge Method (disposable bailer, teflon bailer, submersible pump, etc.)
teflon bailer

Sample Method (disposable bailer, teflon bailer, submersible pump, etc.)
teflon bailer

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.)

Remarks (well recovery, unusual conditions/observations):
PID 2.6 ppm

Duplicate Sample ID:
Split Sample ID:
Analyses Requested: GRO/BTEX/DRO/RRO

Signed: Hannah, Weller, Strickler
Date: 3/29/2008

Signed/reviewer:
Date:

GROUNDWATER SAMPLE DATA SHEET

Project Number:	45507	Sample Location (ie. MW-1):	GEI-9
Project Name:	FIA West Ramp/Gate 28	Sample ID (ie. MW-1-W-yymmdd):	GEI-9-W-080329
Client:	ARCADIS	Date Sample Collected:	3/29/2008
Sampler:	Hannah, Weller, Strickler	Time sampled:	1430

Well Information

Groundwater:	X	Casing Diameter (in):	2	a) Well Depth (ft):	12.8
				b) Water Depth (ft):	10.73
Other:	DTP 10.65'			c) Water Column (ft):	2.07
				d) Calc. Purge Vol. (gal):	0.3

Calculating Purge Volume

Well Casing Diameter	Multiply c) by:
2	0.16
4	0.65
6	1.47

Sand Pack Diameter	Multiply c) by:
8	0.71
10	1
12	1.28

Note: assuming sand pack has 29% porosity

Example 1- purging only well casing volume
2-inch casing and 6-foot water column
One Purge Volume= 0.16 X 6 = 0.96 gallons water

Example 2- purging well casing and sand pack volume
2-inch casing, 8-inch sand pack, and 6-foot water column
One Purge Volume= (0.16 X 6) + (0.71 X 6) = 5.22 gallons water

FIELD MEASUREMENTS

Time	Volume (gallons)	pH	Conductivity (mS)	Temperature (C)	Color	Turbidity	Redox	Dissolved O_2	Other
1410	0.5	7.11	0.522	2.0	light grey				
1415	1.5	6.88	0.523	2.2	light grey				
1420	2	6.83	0.522	2.1	light grey				

Total Volume Purged (Gallons): 2
Free Product (y/n):
Odor:
Sheen (y/n):

Purge Method (disposable bailer, teflon bailer, submersible pump, etc.)
teflon bailer

Sample Method (disposable bailer, teflon bailer, submersible pump, etc.)
teflon bailer

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.)

Remarks (well recovery, unusual conditions/observations):
PID 12.6 ppm

Duplicate Sample ID:
Split Sample ID:

Analyses Requested: GRO/BTEX/DRO/RRO
lead/VOC's

Signed: Hannah, Weller, Strickler
Date: 3/29/2008

Signed/reviewer:
Date:

ARCADIS

Appendix B

Laboratory Data Report & ADEC
Data Review Checklist

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400
BOTHELL, WA 98011-8244
PH: (425) 420.9200 FAX: (425) 420.9210
CS Approval Number: UST-067

April 16, 2008

Mike Strickler
Arcadis, Geraghty, & Miller - Seattle
2300 Eastlake Avenue East, Suite 100
Seattle, WA/USA 98102

RE: 306443 (Former Unocal 0207)

Enclosed are the results of analyses for samples received by the laboratory on 04/02/08 09:45.
The following list is a summary of the Work Orders contained in this report, generated on 04/16/08 16:22.

If you have any questions concerning this report, please feel free to contact me.

Work Order	Project	ProjectNumber
BRD0022	306443 (Former Unocal 0207)	Chevron Alaska Sampling

TestAmerica Seattle

Blake T. Meinert, Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400
BOTHELL, WA 98011-8244
PH: (425) 420.9200 FAX: (425) 420.9210
CS Approval Number: UST-067

Arcadis, Geraghty, & Miller - Seattle	Project Name:	**306443 (Former Unocal 0207)**	
2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GEI-2-W-080329	BRD0022-01	Water	03/29/08 16:30	04/02/08 09:45
GEI-3-W-080329	BRD0022-02	Water	03/29/08 17:00	04/02/08 09:45
GEI-4-W-080329	BRD0022-03	Water	03/29/08 16:15	04/02/08 09:45
GEI-5-W-080329	BRD0022-04	Water	03/29/08 18:00	04/02/08 09:45
GEI-6-W-080329	BRD0022-05	Water	03/29/08 17:15	04/02/08 09:45
GEI-7-W-080329	BRD0022-06	Water	03/29/08 15:45	04/02/08 09:45
GEI-8-W-080329	BRD0022-07	Water	03/29/08 15:15	04/02/08 09:45
GEI-9-W-080329	BRD0022-08	Water	03/29/08 14:30	04/02/08 09:45
DUP-1-W-080329	BRD0022-09	Water	03/29/08 06:00	04/02/08 09:45
QA-T-W-W-080329	BRD0022-10	Water	03/29/08 06:00	04/02/08 09:45
PW-W-080329	BRD0022-11	Water	03/29/08 18:10	04/02/08 09:45

TestAmerica Seattle

Blake T. Meinert, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.

SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400
BOTHELL, WA 98011-8244
PH: (425) 420.9200 FAX: (425) 420.9210
CS Approval Number: UST-067

Arcadis, Geraghty, & Miller - Seattle	Project Name:	306443 (Former Unocal 0207)	
2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

Analytical Case Narrative
TestAmerica - Seattle, WA

BRD0022

CASE NARRATIVE:

SAMPLE RECEIPT

The samples were received 4/2/08 by TestAmerica - Seattle. The temperature of the samples at the time of receipt was 8.8 degrees Celsius.

PREPARATIONS AND ANALYSIS

No additional anomalies, discrepancies, or issues were associated with sample preparation, analysis and quality control other than those already qualified in the data and described in the Notes and Definitions page at the end of the report.

No anomalies were associated with the sample preparation and analysis. All criteria for acceptable QC measurements were met.

SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400
BOTHELL, WA 98011-8244
PH: (425) 420.9200 FAX: (425) 420.9210
CS Approval Number: UST-067

Arcadis, Geraghty, & Miller - Seattle	Project Name:	**306443 (Former Unocal 0207)**	
2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

Gasoline Range Hydrocarbons (n-Hexane to <n-Decane) by AK101

TestAmerica Seattle

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
BRD0022-01 (GEI-2-W-080329)		**Water**			**Sampled: 03/29/08 16:30**						
Gasoline Range Hydrocarbons	AK 101	ND	-----	50.0	ug/l	1x	8D08023	04/08/08 10:17	04/08/08 20:21	KMT	
Surrogate(s): 4-BFB (FID)			*88.7%*		*60 - 120 %*		*"*			*"*	
BRD0022-02 (GEI-3-W-080329)		**Water**			**Sampled: 03/29/08 17:00**						
Gasoline Range Hydrocarbons	AK 101	**492**	-----	50.0	ug/l	1x	8D08023	04/08/08 10:17	04/09/08 14:17	KMT	Q1
Surrogate(s): 4-BFB (FID)			*132%*		*60 - 120 %*		*"*			*"*	*ZX*
BRD0022-03 (GEI-4-W-080329)		**Water**			**Sampled: 03/29/08 16:15**						
Gasoline Range Hydrocarbons	AK 101	**255**	-----	50.0	ug/l	1x	8D08023	04/08/08 10:17	04/09/08 14:50	KMT	Q8
Surrogate(s): 4-BFB (FID)			*133%*		*60 - 120 %*		*"*			*"*	*ZX*
BRD0022-04 (GEI-5-W-080329)		**Water**			**Sampled: 03/29/08 18:00**						
Gasoline Range Hydrocarbons	AK 101	**68.1**	-----	50.0	ug/l	1x	8D08023	04/08/08 10:17	04/09/08 00:42	KMT	
Surrogate(s): 4-BFB (FID)			*92.6%*		*60 - 120 %*		*"*			*"*	
BRD0022-05RE1 (GEI-6-W-080329)		**Water**			**Sampled: 03/29/08 17:15**						
Gasoline Range Hydrocarbons	AK 101	**1170**	-----	250	ug/l	5x	8D10017	04/10/08 09:32	04/11/08 23:22	KMT	Q8
Surrogate(s): 4-BFB (FID)			*99.5%*		*60 - 120 %*		*1x*			*"*	
BRD0022-06RE1 (GEI-7-W-080329)		**Water**			**Sampled: 03/29/08 15:45**						
Gasoline Range Hydrocarbons	AK 101	**1630**	-----	500	ug/l	10x	8D10017	04/10/08 09:32	04/11/08 16:12	KMT	Q8
Surrogate(s): 4-BFB (FID)			*106%*		*60 - 120 %*		*1x*			*"*	
BRD0022-07 (GEI-8-W-080329)		**Water**			**Sampled: 03/29/08 15:15**						
Gasoline Range Hydrocarbons	AK 101	**62.0**	-----	50.0	ug/l	1x	8D08023	04/08/08 10:17	04/09/08 13:44	KMT	Q8
Surrogate(s): 4-BFB (FID)			*92.2%*		*60 - 120 %*		*"*			*"*	
BRD0022-08RE1 (GEI-9-W-080329)		**Water**			**Sampled: 03/29/08 14:30**						
Gasoline Range Hydrocarbons	AK 101	**1690**	-----	500	ug/l	10x	8D10017	04/10/08 09:32	04/11/08 16:45	KMT	Q8
Surrogate(s): 4-BFB (FID)			*100%*		*60 - 120 %*		*1x*			*"*	

TestAmerica Seattle

Blake T. Meinert, Project Manager

SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400
BOTHELL, WA 98011-8244
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CS Approval Number: UST-067

Arcadis, Geraghty, & Miller - Seattle	Project Name:	**306443 (Former Unocal 0207)**	
2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

Gasoline Range Hydrocarbons (n-Hexane to <n-Decane) by AK101

TestAmerica Seattle

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
BRD0022-09RE1 (DUP-1-W-080329)		**Water**			**Sampled: 03/29/08 06:00**						
Gasoline Range Hydrocarbons	AK 101	**1630**	-----	500	ug/l	10x	8D10017	04/10/08 09:32	04/11/08 17:18	KMT	**Q1**
Surrogate(s): 4-BFB (FID)			*111%*		*60 - 120 %*		*1x*			*"*	
BRD0022-10 (QA-T-W-W-080329)		**Water**			**Sampled: 03/29/08 06:00**						
Gasoline Range Hydrocarbons	AK 101	ND	-----	50.0	ug/l	1x	8D08023	04/08/08 10:17	04/09/08 09:55	KMT	
Surrogate(s): 4-BFB (FID)			*88.9%*		*60 - 120 %*		*"*			*"*	
BRD0022-11 (PW-W-080329)		**Water**			**Sampled: 03/29/08 18:10**						
Gasoline Range Hydrocarbons	AK 101	**1020**	-----	500	ug/l	10x	8D08023	04/08/08 10:17	04/09/08 15:23	KMT	**Q8**
Surrogate(s): 4-BFB (FID)			*92.6%*		*60 - 120 %*		*1x*			*"*	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400
BOTHELL, WA 98011-8244
PH: (425) 420.9200 FAX: (425) 420.9210
CS Approval Number: UST-067

Arcadis, Geraghty, & Miller - Seattle	Project Name:	306443 (Former Unocal 0207)	
2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

Diesel Hydrocarbons (C10-C25) and Heavy Oil (C25-C36) by AK102 and AK103

TestAmerica Seattle

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
BRD0022-02 (GEI-3-W-080329)		**Water**				**Sampled: 03/29/08 17:00**					
Residual Range Organics	AK102_103	**0.863**	-----	0.735	mg/l	1x	8D03027	04/03/08 10:50	04/07/08 16:28	EKK	
Surrogate(s): 2-FBP		*46.3%*			*50 - 150 %*	"				"	**Z**
Octacosane		*95.5%*			*50 - 150 %*	"				"	
BRD0022-02RE1 (GEI-3-W-080329)		**Water**				**Sampled: 03/29/08 17:00**					
Diesel Range Hydrocarbons	AK102_103	**47.1**	-----	0.490	mg/l	5x	8D03027	04/03/08 10:50	04/08/08 12:49	EKK	Q9
Surrogate(s): 2-FBP		*122%*			*50 - 150 %*	"				"	
Octacosane		*99.6%*			*50 - 150 %*	"				"	
BRD0022-03 (GEI-4-W-080329)		**Water**				**Sampled: 03/29/08 16:15**					
Diesel Range Hydrocarbons	AK102_103	**11.3**	-----	0.0980	mg/l	1x	8D03027	04/03/08 10:50	04/07/08 16:58	EKK	Q9
Residual Range Organics	"	ND	-----	0.735	"	"	"	"	"	EKK	
Surrogate(s): 2-FBP		*108%*			*50 - 150 %*	"				"	
Octacosane		*94.1%*			*50 - 150 %*	"				"	
BRD0022-04 (GEI-5-W-080329)		**Water**				**Sampled: 03/29/08 18:00**					
Diesel Range Hydrocarbons	AK102_103	**1.86**	-----	0.0943	mg/l	1x	8D03027	04/03/08 10:50	04/07/08 17:27	EKK	Q9
Residual Range Organics	"	ND	-----	0.708	"	"	"	"	"	EKK	
Surrogate(s): 2-FBP		*83.7%*			*50 - 150 %*	"				"	
Octacosane		*92.0%*			*50 - 150 %*	"				"	
BRD0022-05 (GEI-6-W-080329)		**Water**				**Sampled: 03/29/08 17:15**					
Residual Range Organics	AK102_103	**0.904**	-----	0.714	mg/l	1x	8D03027	04/03/08 10:50	04/07/08 17:57	EKK	
Surrogate(s): 2-FBP		*343%*			*50 - 150 %*	"				"	**ZX**
Octacosane		*81.1%*			*50 - 150 %*	"				"	
BRD0022-05RE1 (GEI-6-W-080329)		**Water**				**Sampled: 03/29/08 17:15**					
Diesel Range Hydrocarbons	AK102_103	**334**	-----	4.76	mg/l	50x	8D03027	04/03/08 10:50	04/08/08 13:17	EKK	Q9
Surrogate(s): 2-FBP		*318%*			*50 - 150 %*	"				"	**ZX**
Octacosane		*99.7%*			*50 - 150 %*	"				"	

TestAmerica Seattle

Blake T. Meinert, Project Manager

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SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400
BOTHELL, WA 98011-8244
PH: (425) 420.9200 FAX: (425) 420.9210
CS Approval Number: UST-067

Arcadis, Geraghty, & Miller - Seattle	Project Name:	306443 (Former Unocal 0207)	
2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

Diesel Hydrocarbons (C10-C25) and Heavy Oil (C25-C36) by AK102 and AK103

TestAmerica Seattle

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
BRD0022-06 (GEI-7-W-080329)		**Water**				**Sampled: 03/29/08 15:45**					
Residual Range Organics	AK102_103	**1.32**	-----	0.714	mg/l	1x	8D03027	04/03/08 10:50	04/07/08 19:53	EKK	
Surrogate(s): 2-FBP		*117%*			*50 - 150 %*	"				"	
Octacosane		*91.7%*			*50 - 150 %*	"				"	
BRD0022-06RE1 (GEI-7-W-080329)		**Water**				**Sampled: 03/29/08 15:45**					
Diesel Range Hydrocarbons	AK102_103	**44.2**	-----	0.476	mg/l	5x	8D03027	04/03/08 10:50	04/08/08 13:46	EKK	Q1
Surrogate(s): 2-FBP		*136%*			*50 - 150 %*	"				"	
Octacosane		*90.1%*			*50 - 150 %*	"				"	
BRD0022-07 (GEI-8-W-080329)		**Water**				**Sampled: 03/29/08 15:15**					
Diesel Range Hydrocarbons	AK102_103	**2.83**	-----	0.101	mg/l	1x	8D03027	04/03/08 10:50	04/07/08 20:22	EKK	Q9
Residual Range Organics	"	ND	-----	0.758	"	"	"	"	"	EKK	
Surrogate(s): 2-FBP		*94.7%*			*50 - 150 %*	"				"	
Octacosane		*102%*			*50 - 150 %*	"				"	
BRD0022-08 (GEI-9-W-080329)		**Water**				**Sampled: 03/29/08 14:30**					
Residual Range Organics	AK102_103	**0.839**	-----	0.743	mg/l	1x	8D03027	04/03/08 10:50	04/07/08 20:51	EKK	
Surrogate(s): 2-FBP		*129%*			*50 - 150 %*	"				"	
Octacosane		*94.6%*			*50 - 150 %*	"				"	
BRD0022-08RE1 (GEI-9-W-080329)		**Water**				**Sampled: 03/29/08 14:30**					
Diesel Range Hydrocarbons	AK102_103	**111**	-----	1.98	mg/l	20x	8D03027	04/03/08 10:50	04/08/08 14:15	EKK	Q9
Surrogate(s): 2-FBP		*121%*			*50 - 150 %*	"				"	
Octacosane		*102%*			*50 - 150 %*	"				"	
BRD0022-09 (DUP-1-W-080329)		**Water**				**Sampled: 03/29/08 06:00**					
Residual Range Organics	AK102_103	**1.47**	-----	0.721	mg/l	1x	8D03027	04/03/08 10:50	04/07/08 21:19	EKK	
Surrogate(s): 2-FBP		*131%*			*50 - 150 %*	"				"	
Octacosane		*92.0%*			*50 - 150 %*	"				"	

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CS Approval Number: UST-067

Arcadis, Geraghty, & Miller - Seattle	Project Name:	**306443 (Former Unocal 0207)**	
2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

Diesel Hydrocarbons (C10-C25) and Heavy Oil (C25-C36) by AK102 and AK103

TestAmerica Seattle

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
BRD0022-09RE1 (DUP-1-W-080329)		**Water**				**Sampled: 03/29/08 06:00**					
Diesel Range Hydrocarbons	AK102_103	**51.4**	-----	0.962	mg/l	10x	8D03027	04/03/08 10:50	04/08/08 14:44	EKK	**Q1**
Surrogate(s): 2-FBP			*152%*		*50 - 150 %*		"		"		***ZX***
Octacosane			*90.8%*		*50 - 150 %*		"		"		

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Arcadis, Geraghty, & Miller - Seattle	Project Name:	**306443 (Former Unocal 0207)**	
2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

BTEX by EPA Method 8021B

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Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
BRD0022-01 (GEI-2-W-080329)		**Water**				**Sampled: 03/29/08 16:30**					
Benzene	EPA 8021B	ND	-----	0.500	ug/l	1x	8D08023	04/08/08 10:17	04/08/08 20:21	KMT	
Toluene	"	ND	-----	0.500	"	"	"	"	"	KMT	
Ethylbenzene	"	ND	-----	0.500	"	"	"	"	"	KMT	
Xylenes (total)	"	ND	-----	1.00	"	"	"	"	"	KMT	
Surrogate(s): 4-BFB (PID)			*101%*		*68 - 140 %*		*"*			*"*	
BRD0022-02 (GEI-3-W-080329)		**Water**				**Sampled: 03/29/08 17:00**					
Benzene	EPA 8021B	ND	-----	0.500	ug/l	1x	8D08023	04/08/08 10:17	04/09/08 14:17	KMT	
Toluene	"	ND	-----	0.500	"	"	"	"	"	KMT	
Ethylbenzene	"	**5.01**	-----	0.500	"	"	"	"	"	KMT	
Xylenes (total)	"	**16.0**	-----	1.00	"	"	"	"	"	KMT	
Surrogate(s): 4-BFB (PID)			*117%*		*68 - 140 %*		*"*			*"*	
BRD0022-03 (GEI-4-W-080329)		**Water**				**Sampled: 03/29/08 16:15**					
Benzene	EPA 8021B	**2.17**	-----	0.500	ug/l	1x	8D08023	04/08/08 10:17	04/09/08 14:50	KMT	
Toluene	"	ND	-----	0.500	"	"	"	"	"	KMT	
Ethylbenzene	"	**4.16**	-----	0.500	"	"	"	"	"	KMT	
Xylenes (total)	"	**9.20**	-----	1.00	"	"	"	"	"	KMT	
Surrogate(s): 4-BFB (PID)			*124%*		*68 - 140 %*		*"*			*"*	
BRD0022-04 (GEI-5-W-080329)		**Water**				**Sampled: 03/29/08 18:00**					
Benzene	EPA 8021B	ND	-----	0.500	ug/l	1x	8D08023	04/08/08 10:17	04/09/08 00:42	KMT	
Toluene	"	ND	-----	0.500	"	"	"	"	"	KMT	
Ethylbenzene	"	ND	-----	0.500	"	"	"	"	"	KMT	
Xylenes (total)	"	**1.78**	-----	1.00	"	"	"	"	"	KMT	
Surrogate(s): 4-BFB (PID)			*103%*		*68 - 140 %*		*"*			*"*	
BRD0022-05RE1 (GEI-6-W-080329)		**Water**				**Sampled: 03/29/08 17:15**					
Benzene	EPA 8021B	**8.41**	-----	2.50	ug/l	5x	8D10017	04/10/08 09:32	04/11/08 23:22	KMT	
Toluene	"	ND	-----	2.50	"	"	"	"	"	KMT	**RL1**
Ethylbenzene	"	**33.8**	-----	2.50	"	"	"	"	"	KMT	
Xylenes (total)	"	**128**	-----	5.00	"	"	"	"	"	KMT	
Surrogate(s): 4-BFB (PID)			*108%*		*68 - 140 %*		*1x*			*"*	

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CS Approval Number: UST-067

Arcadis, Geraghty, & Miller - Seattle	Project Name:	306443 (Former Unocal 0207)	
2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

BTEX by EPA Method 8021B

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Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
BRD0022-06RE1 (GEI-7-W-080329)		**Water**				**Sampled: 03/29/08 15:45**					
Benzene	EPA 8021B	**31.1**	-----	5.00	ug/l	10x	8D10017	04/10/08 09:32	04/11/08 16:12	KMT	
Toluene	"	ND	-----	5.00	"	"	"	"	"	KMT	RL1
Ethylbenzene	"	**90.5**	-----	5.00	"	"	"	"	"	KMT	
Xylenes (total)	"	**147**	-----	10.0	"	"	"	"	"	KMT	
Surrogate(s): 4-BFB (PID)			*111%*		*68 - 140 %*		*1x*			*"*	
BRD0022-07 (GEI-8-W-080329)		**Water**				**Sampled: 03/29/08 15:15**					
Benzene	EPA 8021B	ND	-----	0.500	ug/l	1x	8D08023	04/08/08 10:17	04/09/08 13:44	KMT	
Toluene	"	ND	-----	0.500	"	"	"	"	"	KMT	
Ethylbenzene	"	ND	-----	0.500	"	"	"	"	"	KMT	
Xylenes (total)	"	**1.94**	-----	1.00	"	"	"	"	"	KMT	
Surrogate(s): 4-BFB (PID)			*103%*		*68 - 140 %*		*"*			*"*	
BRD0022-08RE1 (GEI-9-W-080329)		**Water**				**Sampled: 03/29/08 14:30**					
Benzene	EPA 8021B	**7.23**	-----	5.00	ug/l	10x	8D10017	04/10/08 09:32	04/11/08 16:45	KMT	
Toluene	"	ND	-----	5.00	"	"	"	"	"	KMT	RL1
Ethylbenzene	"	**25.1**	-----	5.00	"	"	"	"	"	KMT	
Xylenes (total)	"	**85.5**	-----	10.0	"	"	"	"	"	KMT	
Surrogate(s): 4-BFB (PID)			*111%*		*68 - 140 %*		*1x*			*"*	
BRD0022-09RE1 (DUP-1-W-080329)		**Water**				**Sampled: 03/29/08 06:00**					
Benzene	EPA 8021B	**26.8**	-----	5.00	ug/l	10x	8D10017	04/10/08 09:32	04/11/08 17:18	KMT	
Toluene	"	ND	-----	5.00	"	"	"	"	"	KMT	RL1
Ethylbenzene	"	**85.2**	-----	5.00	"	"	"	"	"	KMT	
Xylenes (total)	"	**131**	-----	10.0	"	"	"	"	"	KMT	
Surrogate(s): 4-BFB (PID)			*113%*		*68 - 140 %*		*1x*			*"*	
BRD0022-10 (QA-T-W-W-080329)		**Water**				**Sampled: 03/29/08 06:00**					
Benzene	EPA 8021B	ND	-----	0.500	ug/l	1x	8D08023	04/08/08 10:17	04/09/08 09:55	KMT	
Toluene	"	ND	-----	0.500	"	"	"	"	"	KMT	
Ethylbenzene	"	ND	-----	0.500	"	"	"	"	"	KMT	
Xylenes (total)	"	ND	-----	1.00	"	"	"	"	"	KMT	
Surrogate(s): 4-BFB (PID)			*98.9%*		*68 - 140 %*		*"*			*"*	

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2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

BTEX by EPA Method 8021B

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Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
BRD0022-11 (PW-W-080329)		**Water**				**Sampled: 03/29/08 18:10**					
Benzene	EPA 8021B	**8.02**	-----	5.00	ug/l	10x	8D08023	04/08/08 10:17	04/09/08 15:23	KMT	
Toluene	"	**54.9**	-----	5.00	"	"	"	"	"	KMT	
Ethylbenzene	"	**27.6**	-----	5.00	"	"	"	"	"	KMT	
Xylenes (total)	"	**207**	-----	10.0	"	"	"	"	"	KMT	
Surrogate(s): 4-BFB (PID)			*105%*		*68 - 140 %*	*1x*				"	

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Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

Total Metals by EPA 6000/7000 Series Methods

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Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
BRD0022-05 (GEI-6-W-080329)		**Water**				**Sampled: 03/29/08 17:15**					
Lead	EPA 6010B	**0.0588**	-----	0.0500	mg/l	1x	8D03048	04/03/08 14:48	04/04/08 14:14	WAS	
BRD0022-08 (GEI-9-W-080329)		**Water**				**Sampled: 03/29/08 14:30**					
Lead	EPA 6010B	**0.0894**	-----	0.0500	mg/l	1x	8D03048	04/03/08 14:48	04/04/08 14:17	WAS	

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Arcadis, Geraghty, & Miller - Seattle	Project Name:	**306443 (Former Unocal 0207)**	
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Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

Volatile Organic Compounds by EPA Method 8260B

TestAmerica Seattle

BRD0022-05 (GEI-6-W-080329) — **Water** — **Sampled: 03/29/08 17:15**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
Acetone	EPA 8260B	ND	-----	20.0	ug/l	1x	8D10055	04/10/08 17:26	04/11/08 00:15	EC	
Benzene	"	**6.06**	-----	1.00	"	"	"	"	"	EC	
Bromobenzene	"	ND	-----	1.00	"	"	"	"	"	EC	
Bromochloromethane	"	ND	-----	1.00	"	"	"	"	"	EC	
Bromodichloromethane	"	ND	-----	1.00	"	"	"	"	"	EC	
Bromoform	"	ND	-----	1.00	"	"	"	"	"	EC	
Bromomethane	"	ND	-----	2.00	"	"	"	"	"	EC	
2-Butanone	"	ND	-----	10.0	"	"	"	"	"	EC	
n-Butylbenzene	"	**6.37**	-----	1.00	"	"	"	"	"	EC	
sec-Butylbenzene	"	**5.08**	-----	1.00	"	"	"	"	"	EC	
tert-Butylbenzene	"	**1.80**	-----	1.00	"	"	"	"	"	EC	
Carbon disulfide	"	ND	-----	1.00	"	"	"	"	"	EC	
Carbon tetrachloride	"	ND	-----	1.00	"	"	"	"	"	EC	
Chlorobenzene	"	ND	-----	1.00	"	"	"	"	"	EC	
Chloroethane	"	ND	-----	1.00	"	"	"	"	"	EC	
1-Chlorohexane	"	ND	-----	1.00	"	"	"	"	"	EC	
Chloroform	"	ND	-----	1.00	"	"	"	"	"	EC	
Chloromethane	"	ND	-----	5.00	"	"	"	"	"	EC	
2-Chlorotoluene	"	ND	-----	1.00	"	"	"	"	"	EC	
4-Chlorotoluene	"	ND	-----	1.00	"	"	"	"	"	EC	
Dibromochloromethane	"	ND	-----	1.00	"	"	"	"	"	EC	
1,2-Dibromo-3-chloropropane	"	ND	-----	5.00	"	"	"	"	"	EC	
1,2-Dibromoethane	"	ND	-----	1.00	"	"	"	"	"	EC	
Dibromomethane	"	ND	-----	1.00	"	"	"	"	"	EC	
1,2-Dichlorobenzene	"	ND	-----	1.00	"	"	"	"	"	EC	
1,3-Dichlorobenzene	"	ND	-----	1.00	"	"	"	"	"	EC	
1,4-Dichlorobenzene	"	ND	-----	1.00	"	"	"	"	"	EC	
Dichlorodifluoromethane	"	ND	-----	1.00	"	"	"	"	"	EC	
1,1-Dichloroethane	"	ND	-----	1.00	"	"	"	"	"	EC	
1,2-Dichloroethane	"	ND	-----	1.00	"	"	"	"	"	EC	
1,1-Dichloroethene	"	ND	-----	1.00	"	"	"	"	"	EC	
cis-1,2-Dichloroethene	"	ND	-----	1.00	"	"	"	"	"	EC	
trans-1,2-Dichloroethene	"	ND	-----	1.00	"	"	"	"	"	EC	
1,2-Dichloropropane	"	ND	-----	1.00	"	"	"	"	"	EC	
1,3-Dichloropropane	"	ND	-----	1.00	"	"	"	"	"	EC	
2,2-Dichloropropane	"	ND	-----	1.00	"	"	"	"	"	EC	
1,1-Dichloropropene	"	ND	-----	1.00	"	"	"	"	"	EC	

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2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

Volatile Organic Compounds by EPA Method 8260B

TestAmerica Seattle

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
BRD0022-05 (GEI-6-W-080329)		**Water**				**Sampled: 03/29/08 17:15**					
cis-1,3-Dichloropropene	EPA 8260B	ND	-----	1.00	ug/l	1x	8D10055	04/10/08 17:26	04/11/08 00:15	EC	
trans-1,3-Dichloropropene	"	ND	-----	1.00	"	"	"	"	"	EC	
Ethylbenzene	"	**20.2**	-----	1.00	"	"	"	"	"	EC	
Hexachlorobutadiene	"	ND	-----	5.00	"	"	"	"	"	EC	
Methyl tert-butyl ether	"	ND	-----	2.00	"	"	"	"	"	EC	
n-Hexane	"	ND	-----	2.00	"	"	"	"	"	EC	
2-Hexanone	"	ND	-----	10.0	"	"	"	"	"	EC	
Isopropylbenzene	"	**6.04**	-----	1.00	"	"	"	"	"	EC	
p-Isopropyltoluene	"	**13.6**	-----	1.00	"	"	"	"	"	EC	
4-Methyl-2-pentanone	"	ND	-----	10.0	"	"	"	"	"	EC	
Methylene chloride	"	ND	-----	5.00	"	"	"	"	"	EC	
n-Propylbenzene	"	**5.83**	-----	1.00	"	"	"	"	"	EC	
Styrene	"	ND	-----	1.00	"	"	"	"	"	EC	
1,2,3-Trichlorobenzene	"	ND	-----	5.00	"	"	"	"	"	EC	
1,2,4-Trichlorobenzene	"	ND	-----	5.00	"	"	"	"	"	EC	
1,1,1,2-Tetrachloroethane	"	ND	-----	1.00	"	"	"	"	"	EC	
1,1,2,2-Tetrachloroethane	"	ND	-----	1.00	"	"	"	"	"	EC	
Tetrachloroethene	"	ND	-----	1.00	"	"	"	"	"	EC	
Toluene	"	ND	-----	1.00	"	"	"	"	"	EC	
1,1,1-Trichloroethane	"	ND	-----	1.00	"	"	"	"	"	EC	
1,1,2-Trichloroethane	"	ND	-----	1.00	"	"	"	"	"	EC	
Trichloroethene	"	ND	-----	1.00	"	"	"	"	"	EC	
Trichlorofluoromethane	"	ND	-----	1.00	"	"	"	"	"	EC	
1,2,3-Trichloropropane	"	ND	-----	1.00	"	"	"	"	"	EC	
1,3,5-Trimethylbenzene	"	**86.8**	-----	1.00	"	"	"	"	"	EC	
Vinyl chloride	"	ND	-----	1.00	"	"	"	"	"	EC	
o-Xylene	"	**15.2**	-----	1.00	"	"	"	"	"	EC	
m,p-Xylene	"	**88.4**	-----	2.00	"	"	"	"	"	EC	
Total Xylenes	"	**104**	-----	3.00	"	"	"	"	"	EC	
Surrogate(s): 1,2-DCA-d4			*107%*		*70 - 130 %*		*"*		*"*		
Toluene-d8			*101%*		*75 - 125 %*		*"*		*"*		
4-BFB			*101%*		*75 - 125 %*		*"*		*"*		

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Blake T. Meinert, Project Manager

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BOTHELL, WA 98011-8244
PH: (425) 420.9200 FAX: (425) 420.9210
CS Approval Number: UST-067

Arcadis, Geraghty, & Miller - Seattle	Project Name:	**306443 (Former Unocal 0207)**	
2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

Volatile Organic Compounds by EPA Method 8260B

TestAmerica Seattle

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
BRD0022-05RE1 (GEI-6-W-080329)		**Water**				**Sampled: 03/29/08 17:15**					
Naphthalene	EPA 8260B	**130**	-----	25.0	ug/l	5x	8D11008	04/11/08 16:36	04/12/08 00:05	KPS	
1,2,4-Trimethylbenzene	"	**187**	-----	5.00	"	"	"	"	"	KPS	
Surrogate(s): 1,2-DCA-d4		*98.6%*			*70 - 130 %*	*1x*			*"*		
Toluene-d8		*101%*			*75 - 125 %*	*"*			*"*		
4-BFB		*100%*			*75 - 125 %*	*"*			*"*		
BRD0022-08 (GEI-9-W-080329)		**Water**				**Sampled: 03/29/08 14:30**					
Acetone	EPA 8260B	ND	-----	20.0	ug/l	1x	8D10055	04/10/08 17:26	04/11/08 00:40	EC	
Benzene	"	**8.58**	-----	1.00	"	"	"	"	"	EC	
Bromobenzene	"	ND	-----	1.00	"	"	"	"	"	EC	
Bromochloromethane	"	ND	-----	1.00	"	"	"	"	"	EC	
Bromodichloromethane	"	ND	-----	1.00	"	"	"	"	"	EC	
Bromoform	"	ND	-----	1.00	"	"	"	"	"	EC	
Bromomethane	"	ND	-----	2.00	"	"	"	"	"	EC	
2-Butanone	"	ND	-----	10.0	"	"	"	"	"	EC	
n-Butylbenzene	"	**21.1**	-----	1.00	"	"	"	"	"	EC	
sec-Butylbenzene	"	**11.2**	-----	1.00	"	"	"	"	"	EC	
tert-Butylbenzene	"	**1.47**	-----	1.00	"	"	"	"	"	EC	
Carbon disulfide	"	ND	-----	1.00	"	"	"	"	"	EC	
Carbon tetrachloride	"	ND	-----	1.00	"	"	"	"	"	EC	
Chlorobenzene	"	ND	-----	1.00	"	"	"	"	"	EC	
Chloroethane	"	ND	-----	1.00	"	"	"	"	"	EC	
1-Chlorohexane	"	ND	-----	1.00	"	"	"	"	"	EC	
Chloroform	"	ND	-----	1.00	"	"	"	"	"	EC	
Chloromethane	"	ND	-----	5.00	"	"	"	"	"	EC	
2-Chlorotoluene	"	ND	-----	1.00	"	"	"	"	"	EC	
4-Chlorotoluene	"	ND	-----	1.00	"	"	"	"	"	EC	
Dibromochloromethane	"	ND	-----	1.00	"	"	"	"	"	EC	
1,2-Dibromo-3-chloropropane	"	ND	-----	5.00	"	"	"	"	"	EC	
1,2-Dibromoethane	"	ND	-----	1.00	"	"	"	"	"	EC	
Dibromomethane	"	ND	-----	1.00	"	"	"	"	"	EC	
1,2-Dichlorobenzene	"	ND	-----	1.00	"	"	"	"	"	EC	
1,3-Dichlorobenzene	"	ND	-----	1.00	"	"	"	"	"	EC	
1,4-Dichlorobenzene	"	ND	-----	1.00	"	"	"	"	"	EC	
Dichlorodifluoromethane	"	ND	-----	1.00	"	"	"	"	"	EC	
1,1-Dichloroethane	"	ND	-----	1.00	"	"	"	"	"	EC	
1,2-Dichloroethane	"	ND	-----	1.00	"	"	"	"	"	EC	

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Blake T. Meinert, Project Manager

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PH: (425) 420.9200 FAX: (425) 420.9210
CS Approval Number: UST-067

Arcadis, Geraghty, & Miller - Seattle	Project Name:	**306443 (Former Unocal 0207)**	
2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

Volatile Organic Compounds by EPA Method 8260B

TestAmerica Seattle

BRD0022-08 (GEI-9-W-080329) — **Water** — **Sampled: 03/29/08 14:30**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
1,1-Dichloroethene	EPA 8260B	ND	-----	1.00	ug/l	1x	8D10055	04/10/08 17:26	04/11/08 00:40	EC	
cis-1,2-Dichloroethene	"	ND	-----	1.00	"	"	"	"	"	EC	
trans-1,2-Dichloroethene	"	ND	-----	1.00	"	"	"	"	"	EC	
1,2-Dichloropropane	"	ND	-----	1.00	"	"	"	"	"	EC	
1,3-Dichloropropane	"	ND	-----	1.00	"	"	"	"	"	EC	
2,2-Dichloropropane	"	ND	-----	1.00	"	"	"	"	"	EC	
1,1-Dichloropropene	"	ND	-----	1.00	"	"	"	"	"	EC	
cis-1,3-Dichloropropene	"	ND	-----	1.00	"	"	"	"	"	EC	
trans-1,3-Dichloropropene	"	ND	-----	1.00	"	"	"	"	"	EC	
Ethylbenzene	"	**32.1**	-----	1.00	"	"	"	"	"	EC	
Hexachlorobutadiene	"	ND	-----	5.00	"	"	"	"	"	EC	
Methyl tert-butyl ether	"	ND	-----	2.00	"	"	"	"	"	EC	
n-Hexane	"	ND	-----	2.00	"	"	"	"	"	EC	
2-Hexanone	"	ND	-----	10.0	"	"	"	"	"	EC	
Isopropylbenzene	"	**20.3**	-----	1.00	"	"	"	"	"	EC	
p-Isopropyltoluene	"	**13.0**	-----	1.00	"	"	"	"	"	EC	
4-Methyl-2-pentanone	"	ND	-----	10.0	"	"	"	"	"	EC	
Methylene chloride	"	ND	-----	5.00	"	"	"	"	"	EC	
Naphthalene	"	**95.1**	-----	5.00	"	"	"	"	"	EC	
n-Propylbenzene	"	**31.8**	-----	1.00	"	"	"	"	"	EC	
Styrene	"	ND	-----	1.00	"	"	"	"	"	EC	
1,2,3-Trichlorobenzene	"	ND	-----	5.00	"	"	"	"	"	EC	
1,2,4-Trichlorobenzene	"	ND	-----	5.00	"	"	"	"	"	EC	
1,1,1,2-Tetrachloroethane	"	ND	-----	1.00	"	"	"	"	"	EC	
1,1,2,2-Tetrachloroethane	"	ND	-----	1.00	"	"	"	"	"	EC	
Tetrachloroethene	"	ND	-----	1.00	"	"	"	"	"	EC	
Toluene	"	ND	-----	1.00	"	"	"	"	"	EC	
1,1,1-Trichloroethane	"	ND	-----	1.00	"	"	"	"	"	EC	
1,1,2-Trichloroethane	"	ND	-----	1.00	"	"	"	"	"	EC	
Trichloroethene	"	ND	-----	1.00	"	"	"	"	"	EC	
Trichlorofluoromethane	"	ND	-----	1.00	"	"	"	"	"	EC	
1,2,3-Trichloropropane	"	ND	-----	1.00	"	"	"	"	"	EC	
1,3,5-Trimethylbenzene	"	**69.9**	-----	1.00	"	"	"	"	"	EC	
Vinyl chloride	"	ND	-----	1.00	"	"	"	"	"	EC	
o-Xylene	"	**28.8**	-----	1.00	"	"	"	"	"	EC	
m,p-Xylene	"	**70.0**	-----	2.00	"	"	"	"	"	EC	
Total Xylenes	"	**98.8**	-----	3.00	"	"	"	"	"	EC	

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Blake T. Meinert, Project Manager

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CS Approval Number: UST-067

Arcadis, Geraghty, & Miller - Seattle	Project Name:	**306443 (Former Unocal 0207)**	
2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

Volatile Organic Compounds by EPA Method 8260B

TestAmerica Seattle

Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
BRD0022-08 (GEI-9-W-080329)			**Water**			**Sampled: 03/29/08 14:30**						
Surrogate(s):	*1,2-DCA-d4*		*111%*		*70 - 130 %*		*1x*			*04/11/08 00:40*		
	Toluene-d8		*97.8%*		*75 - 125 %*		*"*			*"*		
	4-BFB		*97.2%*		*75 - 125 %*		*"*			*"*		
BRD0022-08RE1 (GEI-9-W-080329)			**Water**			**Sampled: 03/29/08 14:30**						
1,2,4-Trimethylbenzene		EPA 8260B	**169**	-----	5.00	ug/l	5x	8D11008	04/11/08 16:36	04/12/08 00:34	KPS	
Surrogate(s):	*1,2-DCA-d4*		*96.0%*		*70 - 130 %*		*1x*			*"*		
	Toluene-d8		*102%*		*75 - 125 %*		*"*			*"*		
	4-BFB		*103%*		*75 - 125 %*		*"*			*"*		

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CS Approval Number: UST-067

Arcadis, Geraghty, & Miller - Seattle
2300 Eastlake Avenue East, Suite 100
Seattle, WA/USA 98102

Project Name: **306443 (Former Unocal 0207)**
Project Number: Chevron Alaska Sampling
Project Manager: Mike Strickler

Report Created:
04/16/08 16:22

Gasoline Range Hydrocarbons (n-Hexane to <n-Decane) by AK101 - Laboratory Quality Control Results

TestAmerica Seattle

QC Batch: 8D08023 **Water Preparation Method: EPA 5030B (P/T)**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (8D08023-BLK1)								**Extracted: 04/08/08 10:17**						
Gasoline Range Hydrocarbons	AK 101	ND	---	50.0	ug/l	1x	--	--	--	--	--	--	04/08/08 16:32	
Surrogate(s): 4-BFB (FID)		*Recovery: 87.6%*		*Limits: 60-120%*		*"*							*04/08/08 16:32*	
LCS (8D08023-BS1)								**Extracted: 04/08/08 10:17**						
Gasoline Range Hydrocarbons	AK 101	1060	---	50.0	ug/l	1x	--	1000	106%	(60-120)	--	--	04/08/08 17:05	
Surrogate(s): 4-BFB (FID)		*Recovery: 93.7%*		*Limits: 60-120%*		*"*							*04/08/08 17:05*	
LCS Dup (8D08023-BSD1)								**Extracted: 04/08/08 10:17**						
Gasoline Range Hydrocarbons	AK 101	921	---	50.0	ug/l	1x	--	1000	92.1%	(60-120)	13.7%	(20)	04/08/08 17:38	
Surrogate(s): 4-BFB (FID)		*Recovery: 94.7%*		*Limits: 60-120%*		*"*							*04/08/08 17:38*	
Duplicate (8D08023-DUP1)				**QC Source: BRD0050-02**				**Extracted: 04/08/08 10:17**						
Gasoline Range Hydrocarbons	AK 101	61.2	---	50.0	ug/l	1x	65.1	--	--	--	6.19%	(20)	04/08/08 19:49	
Surrogate(s): 4-BFB (FID)		*Recovery: 87.7%*		*Limits: 60-120%*		*"*							*04/08/08 19:49*	
Duplicate (8D08023-DUP2)				**QC Source: BRD0050-03**				**Extracted: 04/08/08 10:17**						
Gasoline Range Hydrocarbons	AK 101	108	---	50.0	ug/l	1x	110	--	--	--	2.46%	(20)	04/09/08 00:09	
Surrogate(s): 4-BFB (FID)		*Recovery: 92.7%*		*Limits: 60-120%*		*"*							*04/09/08 00:09*	
Matrix Spike (8D08023-MS1)				**QC Source: BRD0050-02**				**Extracted: 04/08/08 10:17**						
Gasoline Range Hydrocarbons	AK 101	1120	---	50.0	ug/l	1x	65.1	1000	105%	(60-120)	--	--	04/08/08 20:54	
Surrogate(s): 4-BFB (FID)		*Recovery: 94.9%*		*Limits: 60-120%*		*"*							*04/08/08 20:54*	
Matrix Spike Dup (8D08023-MSD1)				**QC Source: BRD0050-02**				**Extracted: 04/08/08 10:17**						
Gasoline Range Hydrocarbons	AK 101	1050	---	50.0	ug/l	1x	65.1	1000	98.4%	(60-120)	6.23%	(20)	04/08/08 21:26	
Surrogate(s): 4-BFB (FID)		*Recovery: 95.5%*		*Limits: 60-120%*		*"*							*04/08/08 21:26*	

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2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

Gasoline Range Hydrocarbons (n-Hexane to <n-Decane) by AK101 - Laboratory Quality Control Results

TestAmerica Seattle

QC Batch: 8D10017 **Water Preparation Method: EPA 5030B (P/T)**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (8D10017-BLK1)									**Extracted: 04/10/08 09:32**					
Gasoline Range Hydrocarbons	AK 101	ND	---	50.0	ug/l	1x	--	--	--	--	--	--	04/11/08 00:17	
Surrogate(s): 4-BFB (FID)		*Recovery: 90.4%*		*Limits: 60-120%*		*"*							*04/11/08 00:17*	
LCS (8D10017-BS1)									**Extracted: 04/10/08 09:32**					
Gasoline Range Hydrocarbons	AK 101	927	---	50.0	ug/l	1x	--	1000	92.7%	(60-120)	--	--	04/11/08 00:50	
Surrogate(s): 4-BFB (FID)		*Recovery: 100%*		*Limits: 60-120%*		*"*							*04/11/08 00:50*	
LCS Dup (8D10017-BSD1)									**Extracted: 04/10/08 09:32**					
Gasoline Range Hydrocarbons	AK 101	870	---	50.0	ug/l	1x	--	1000	87.0%	(60-120)	6.38%	(20)	04/11/08 01:22	
Surrogate(s): 4-BFB (FID)		*Recovery: 98.0%*		*Limits: 60-120%*		*"*							*04/11/08 01:22*	
Duplicate (8D10017-DUP1)					**QC Source: BRD0117-01**				**Extracted: 04/10/08 09:32**					
Gasoline Range Hydrocarbons	AK 101	3070	---	50.0	ug/l	1x	3250	--	--	--	5.81%	(20)	04/11/08 03:34	
Surrogate(s): 4-BFB (FID)		*Recovery: 128%*		*Limits: 60-120%*		*"*							*04/11/08 03:34*	*ZX*
Duplicate (8D10017-DUP2)					**QC Source: BRD0117-07**				**Extracted: 04/10/08 09:32**					
Gasoline Range Hydrocarbons	AK 101	ND	---	50.0	ug/l	1x	ND	--	--	--	34.6%	(20)	04/11/08 22:49	R4
Surrogate(s): 4-BFB (FID)		*Recovery: 91.8%*		*Limits: 60-120%*		*"*							*04/11/08 22:49*	
Matrix Spike (8D10017-MS1)					**QC Source: BRD0117-01**				**Extracted: 04/10/08 09:32**					
Gasoline Range Hydrocarbons	AK 101	4140	---	50.0	ug/l	1x	3250	1000	88.7%	(60-120)	--	--	04/11/08 04:40	
Surrogate(s): 4-BFB (FID)		*Recovery: 139%*		*Limits: 60-120%*		*"*							*04/11/08 04:40*	*ZX*

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2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

Diesel Hydrocarbons (C10-C25) and Heavy Oil (C25-C36) by AK102 and AK103 - Laboratory Quality Control Results

TestAmerica Seattle

QC Batch: 8D03027 **Water Preparation Method: EPA 3520C**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (8D03027-BLK1)										**Extracted: 04/03/08 10:50**				
Diesel Range Hydrocarbons	AK102_103	ND	---	0.100	mg/l	1x	--	--	--	--	--	--	04/07/08 13:32	
Residual Range Organics	"	ND	---	0.750	"	"	--	--	--	--	--	--	"	
Surrogate(s): 2-FBP		*Recovery: 75.7%*		*Limits: 50-150%*		*"*							*04/07/08 13:32*	
Octacosane		*98.2%*		*50-150%*		*"*							*"*	
LCS (8D03027-BS1)										**Extracted: 04/03/08 10:50**				
Diesel Range Hydrocarbons	AK102_103	1.84	---	0.100	mg/l	1x	--	2.00	92.1%	(75-125)	--	--	04/07/08 14:02	
Residual Range Organics	"	1.87	---	0.750	"	"	--	"	93.7%	(60-120)	--	--	"	
Surrogate(s): 2-FBP		*Recovery: 91.5%*		*Limits: 50-150%*		*"*							*04/07/08 14:02*	
Octacosane		*92.9%*		*50-150%*		*"*							*"*	
LCS Dup (8D03027-BSD1)										**Extracted: 04/03/08 10:50**				
Diesel Range Hydrocarbons	AK102_103	1.87	---	0.100	mg/l	1x	--	2.00	93.5%	(75-125)	1.57%	(20)	04/07/08 14:31	
Residual Range Organics	"	1.89	---	0.750	"	"	--	"	94.5%	(60-120)	0.883%	"	"	
Surrogate(s): 2-FBP		*Recovery: 87.0%*		*Limits: 50-150%*		*"*							*04/07/08 14:31*	
Octacosane		*95.5%*		*50-150%*		*"*							*"*	

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2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling		Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler		04/16/08 16:22

BTEX by EPA Method 8021B - Laboratory Quality Control Results

TestAmerica Seattle

QC Batch: 8D08023 **Water Preparation Method: EPA 5030B (P/T)**

Blank (8D08023-BLK1)

Extracted: 04/08/08 10:17

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Benzene	EPA 8021B	ND	---	0.500	ug/l	1x	--	--	--	--	--	--	04/08/08 16:32	
Toluene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Xylenes (total)	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	

Surrogate(s): 4-BFB (PID) Recovery: 100% Limits: 68-140% " 04/08/08 16:32

LCS (8D08023-BS2)

Extracted: 04/08/08 10:17

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Benzene	EPA 8021B	30.1	---	0.500	ug/l	1x	--	30.0	100%	(80-120)	--	--	04/08/08 18:10	
Toluene	"	29.8	---	0.500	"	"	--	"	99.3%	"	--	--	"	
Ethylbenzene	"	29.8	---	0.500	"	"	--	"	99.3%	"	--	--	"	
Xylenes (total)	"	92.2	---	1.00	"	"	--	90.0	102%	"	--	--	"	

Surrogate(s): 4-BFB (PID) Recovery: 99.4% Limits: 68-140% " 04/08/08 18:10

LCS Dup (8D08023-BSD2)

Extracted: 04/08/08 10:17

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Benzene	EPA 8021B	29.1	---	0.500	ug/l	1x	--	30.0	97.1%	(80-120)	3.28%	(25)	04/08/08 18:43	
Toluene	"	28.8	---	0.500	"	"	--	"	96.0%	"	3.39%	"	"	
Ethylbenzene	"	28.8	---	0.500	"	"	--	"	95.9%	"	3.47%	"	"	
Xylenes (total)	"	89.4	---	1.00	"	"	--	90.0	99.3%	"	3.05%	"	"	

Surrogate(s): 4-BFB (PID) Recovery: 100% Limits: 68-140% " 04/08/08 18:43

Duplicate (8D08023-DUP1)

QC Source: BRD0050-02 **Extracted: 04/08/08 10:17**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Benzene	EPA 8021B	1.11	---	0.500	ug/l	1x	1.18	--	--	--	6.46%	(25)	04/08/08 19:49	
Toluene	"	ND	---	0.500	"	"	ND	--	--	--	21.2%	"	"	
Ethylbenzene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Xylenes (total)	"	ND	---	1.00	"	"	ND	--	--	--	19.3%	"	"	

Surrogate(s): 4-BFB (PID) Recovery: 99.8% Limits: 68-140% " 04/08/08 19:49

Duplicate (8D08023-DUP2)

QC Source: BRD0050-03 **Extracted: 04/08/08 10:17**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Benzene	EPA 8021B	1.06	---	0.500	ug/l	1x	1.12	--	--	--	4.68%	(25)	04/09/08 00:09	
Toluene	"	8.13	---	0.500	"	"	8.25	--	--	--	1.44%	"	"	
Ethylbenzene	"	2.46	---	0.500	"	"	2.52	--	--	--	2.09%	"	"	
Xylenes (total)	"	23.2	---	1.00	"	"	23.8	--	--	--	2.36%	"	"	

Surrogate(s): 4-BFB (PID) Recovery: 103% Limits: 68-140% " 04/09/08 00:09

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Blake Meinert

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CS Approval Number: UST-067

Arcadis, Geraghty, & Miller - Seattle	Project Name:	**306443 (Former Unocal 0207)**	
2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

BTEX by EPA Method 8021B - Laboratory Quality Control Results

TestAmerica Seattle

QC Batch: 8D08023 Water Preparation Method: EPA 5030B (P/T)

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Matrix Spike (8D08023-MS2)				**QC Source: BRD0050-03**				**Extracted: 04/08/08 10:17**						
Benzene	EPA 8021B	34.1	---	0.500	ug/l	1x	1.12	30.0	110%	(46-130)	--	--	04/09/08 03:57	
Toluene	"	39.7	---	0.500	"	"	8.25	"	105%	(60-124)	--	--	"	
Ethylbenzene	"	35.5	---	0.500	"	"	2.52	"	110%	(56-141)	--	--	"	
Xylenes (total)	"	121	---	1.00	"	"	23.8	90.0	108%	(66-132)	--	--	"	
Surrogate(s): 4-BFB (PID)		*Recovery: 102%*		*Limits: 68-140%*	*"*								*04/09/08 03:57*	
Matrix Spike Dup (8D08023-MSD2)				**QC Source: BRD0050-03**				**Extracted: 04/08/08 10:17**						
Benzene	EPA 8021B	33.8	---	0.500	ug/l	1x	1.12	30.0	109%	(46-130)	1.01%	(40)	04/09/08 04:29	
Toluene	"	39.2	---	0.500	"	"	8.25	"	103%	(60-124)	1.43%	"	"	
Ethylbenzene	"	34.6	---	0.500	"	"	2.52	"	107%	(56-141)	2.40%	"	"	
Xylenes (total)	"	119	---	1.00	"	"	23.8	90.0	106%	(66-132)	1.56%	"	"	
Surrogate(s): 4-BFB (PID)		*Recovery: 101%*		*Limits: 68-140%*	*"*								*04/09/08 04:29*	

QC Batch: 8D10017 Water Preparation Method: EPA 5030B (P/T)

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (8D10017-BLK1)								**Extracted: 04/10/08 09:32**						
Benzene	EPA 8021B	ND	---	0.500	ug/l	1x	--	--	--	--	--	--	04/11/08 00:17	
Toluene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Xylenes (total)	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Surrogate(s): 4-BFB (PID)		*Recovery: 101%*		*Limits: 68-140%*	*"*								*04/11/08 00:17*	
LCS (8D10017-BS2)								**Extracted: 04/10/08 09:32**						
Benzene	EPA 8021B	28.3	---	0.500	ug/l	1x	--	30.0	94.4%	(80-120)	--	--	04/11/08 01:55	
Toluene	"	30.6	---	0.500	"	"	--	"	102%	"	--	--	"	
Ethylbenzene	"	30.8	---	0.500	"	"	--	"	103%	"	--	--	"	
Xylenes (total)	"	93.4	---	1.00	"	"	--	90.0	104%	"	--	--	"	
Surrogate(s): 4-BFB (PID)		*Recovery: 106%*		*Limits: 68-140%*	*"*								*04/11/08 01:55*	
LCS Dup (8D10017-BSD2)								**Extracted: 04/10/08 09:32**						
Benzene	EPA 8021B	27.7	---	0.500	ug/l	1x	--	30.0	92.5%	(80-120)	2.04%	(25)	04/11/08 02:28	
Toluene	"	29.8	---	0.500	"	"	--	"	99.4%	"	2.43%	"	"	
Ethylbenzene	"	30.2	---	0.500	"	"	--	"	101%	"	1.95%	"	"	
Xylenes (total)	"	91.7	---	1.00	"	"	--	90.0	102%	"	1.74%	"	"	
Surrogate(s): 4-BFB (PID)		*Recovery: 106%*		*Limits: 68-140%*	*"*								*04/11/08 02:28*	

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CS Approval Number: UST-067

Arcadis, Geraghty, & Miller - Seattle	Project Name:	**306443 (Former Unocal 0207)**	
2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

BTEX by EPA Method 8021B - Laboratory Quality Control Results

TestAmerica Seattle

QC Batch: 8D10017 **Water Preparation Method: EPA 5030B (P/T)**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Duplicate (8D10017-DUP1)					**QC Source: BRD0117-01**			**Extracted: 04/10/08 09:32**						
Benzene	EPA 8021B	6.44	---	0.500	ug/l	1x	6.76	--	--	--	4.85%	(25)	04/11/08 03:34	
Toluene	"	ND	---	0.500	"	"	0.652	--	--	--	38.0%	"	"	R4
Ethylbenzene	"	2.06	---	0.500	"	"	2.30	--	--	--	11.0%	"	"	
Xylenes (total)	"	11.6	---	1.00	"	"	12.3	--	--	--	5.47%	"	"	
Surrogate(s): 4-BFB (PID)		*Recovery: 101%*		*Limits: 68-140%*	*"*								*04/11/08 03:34*	
Duplicate (8D10017-DUP2)					**QC Source: BRD0117-07**			**Extracted: 04/10/08 09:32**						
Benzene	EPA 8021B	ND	---	0.500	ug/l	1x	ND	--	--	--	NR	(25)	04/11/08 22:49	
Toluene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Ethylbenzene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Xylenes (total)	"	ND	---	1.00	"	"	ND	--	--	--	NR	"	"	
Surrogate(s): 4-BFB (PID)		*Recovery: 101%*		*Limits: 68-140%*	*"*								*04/11/08 22:49*	
Matrix Spike (8D10017-MS2)					**QC Source: BRD0117-07**			**Extracted: 04/10/08 09:32**						
Benzene	EPA 8021B	32.9	---	0.500	ug/l	1x	0.117	30.0	109%	(46-130)	--	--	04/11/08 23:54	
Toluene	"	27.7	---	0.500	"	"	ND	"	92.3%	(60-124)	--	--	"	
Ethylbenzene	"	38.7	---	0.500	"	"	ND	"	129%	(56-141)	--	--	"	
Xylenes (total)	"	101	---	1.00	"	"	ND	90.0	113%	(66-132)	--	--	"	
Surrogate(s): 4-BFB (PID)		*Recovery: 101%*		*Limits: 68-140%*	*"*								*04/11/08 23:54*	

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Arcadis, Geraghty, & Miller - Seattle	Project Name:	**306443 (Former Unocal 0207)**	
2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

Total Metals by EPA 6000/7000 Series Methods - Laboratory Quality Control Results

TestAmerica Seattle

QC Batch: 8D03048 **Water Preparation Method: EPA 3010A**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (8D03048-BLK1)									**Extracted: 04/03/08 14:48**					
Lead	EPA 6010B	ND	---	0.0500	mg/l	1x	--	--	--	--	--	--	04/04/08 13:14	
LCS (8D03048-BS1)									**Extracted: 04/03/08 14:48**					
Lead	EPA 6010B	5.34	---	0.0500	mg/l	1x	--	5.00	107%	(80-120)	--	--	04/04/08 13:18	
Duplicate (8D03048-DUP1)				**QC Source: BRC0530-01RE1**					**Extracted: 04/03/08 14:48**					
Lead	EPA 6010B	ND	---	0.0500	mg/l	1x	ND	--	--	--	4.44%	(20)	04/04/08 13:25	
Matrix Spike (8D03048-MS1)				**QC Source: BRC0530-01RE1**					**Extracted: 04/03/08 14:48**					
Lead	EPA 6010B	5.19	---	0.0500	mg/l	1x	0.00660	5.00	104%	(80-120)	--	--	04/04/08 13:21	
Post Spike (8D03048-PS1)				**QC Source: BRC0530-01RE1**					**Extracted: 04/03/08 14:48**					
Lead	EPA 6010B	4.95	---		ug/ml	1x	0.00660	5.00	98.8%	(75-125)	--	--	04/04/08 13:28	

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Blake T. Meinert, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.

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CS Approval Number: UST-067

Arcadis, Geraghty, & Miller - Seattle	Project Name:	306443 (Former Unocal 0207)	
2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

Volatile Organic Compounds by EPA Method 8260B - Laboratory Quality Control Results

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QC Batch: 8D10055 Water Preparation Method: EPA 5030B

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (8D10055-BLK1)									**Extracted: 04/10/08 17:26**					
Acetone	EPA 8260B	ND	---	20.0	ug/l	1x	--	--	--	--	--	--	04/10/08 23:24	
Benzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Bromobenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Bromochloromethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Bromodichloromethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Bromoform	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Bromomethane	"	ND	---	2.00	"	"	--	--	--	--	--	--	"	
2-Butanone	"	ND	---	10.0	"	"	--	--	--	--	--	--	"	
n-Butylbenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
sec-Butylbenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
tert-Butylbenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Carbon disulfide	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Carbon tetrachloride	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Chlorobenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Chloroethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1-Chlorohexane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Chloroform	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Chloromethane	"	ND	---	5.00	"	"	--	--	--	--	--	--	"	
2-Chlorotoluene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
4-Chlorotoluene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Dibromochloromethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,2-Dibromo-3-chloropropane	"	ND	---	5.00	"	"	--	--	--	--	--	--	"	
1,2-Dibromoethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Dibromomethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,2-Dichlorobenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,3-Dichlorobenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,4-Dichlorobenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Dichlorodifluoromethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,1-Dichloroethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,2-Dichloroethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,1-Dichloroethene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
cis-1,2-Dichloroethene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
trans-1,2-Dichloroethene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,2-Dichloropropane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,3-Dichloropropane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
2,2-Dichloropropane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,1-Dichloropropene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
cis-1,3-Dichloropropene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
trans-1,3-Dichloropropene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	

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Blake T. Meinert, Project Manager

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CS Approval Number: UST-067

Arcadis, Geraghty, & Miller - Seattle
2300 Eastlake Avenue East, Suite 100
Seattle, WA/USA 98102

Project Name: **306443 (Former Unocal 0207)**
Project Number: Chevron Alaska Sampling
Project Manager: Mike Strickler

Report Created:
04/16/08 16:22

Volatile Organic Compounds by EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Seattle

QC Batch: 8D10055 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (8D10055-BLK1)								**Extracted: 04/10/08 17:26**						
Ethylbenzene	EPA 8260B	ND	---	1.00	ug/l	1x	--	--	--	--	--	--	04/10/08 23:24	
Hexachlorobutadiene	"	ND	---	5.00	"	"	--	--	--	--	--	--	"	
Methyl tert-butyl ether	"	ND	---	2.00	"	"	--	--	--	--	--	--	"	
n-Hexane	"	ND	---	2.00	"	"	--	--	--	--	--	--	"	
2-Hexanone	"	ND	---	10.0	"	"	--	--	--	--	--	--	"	
Isopropylbenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
p-Isopropyltoluene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
4-Methyl-2-pentanone	"	ND	---	10.0	"	"	--	--	--	--	--	--	"	
Methylene chloride	"	ND	---	5.00	"	"	--	--	--	--	--	--	"	
Naphthalene	"	ND	---	5.00	"	"	--	--	--	--	--	--	"	
n-Propylbenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Styrene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,2,3-Trichlorobenzene	"	ND	---	5.00	"	"	--	--	--	--	--	--	"	
1,2,4-Trichlorobenzene	"	ND	---	5.00	"	"	--	--	--	--	--	--	"	
1,1,1,2-Tetrachloroethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,1,2,2-Tetrachloroethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Tetrachloroethene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Toluene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,1,1-Trichloroethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,1,2-Trichloroethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Trichloroethene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Trichlorofluoromethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,2,3-Trichloropropane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,2,4-Trimethylbenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,3,5-Trimethylbenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Vinyl chloride	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
o-Xylene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
m,p-Xylene	"	ND	---	2.00	"	"	--	--	--	--	--	--	"	
Total Xylenes	"	ND	---	3.00	"	"	--	--	--	--	--	--	"	

Surrogate(s)		Recovery	Limits		Analyzed
Surrogate(s):	*1,2-DCA-d4*	*Recovery: 105%*	*Limits: 70-130%*	*"*	*04/10/08 23:24*
	Toluene-d8	*95.0%*	*75-125%*	*"*	*"*
	4-BFB	*100%*	*75-125%*	*"*	*"*

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CS Approval Number: UST-067

Arcadis, Geraghty, & Miller - Seattle	Project Name:	**306443 (Former Unocal 0207)**	
2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

Volatile Organic Compounds by EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Seattle

QC Batch: 8D10055 Water Preparation Method: EPA 5030B

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
LCS (8D10055-BS1)								**Extracted: 04/10/08 17:26**						
Benzene	EPA 8260B	40.5	---	1.00	ug/l	1x	--	40.0	101%	(80-120)	--	--	04/10/08 21:43	
Chlorobenzene	"	39.3	---	1.00	"	"	--	"	98.2%	"	--	--	"	
1,1-Dichloroethene	"	46.0	---	1.00	"	"	--	"	115%	(75-125)	--	--	"	
Methyl tert-butyl ether	"	41.7	---	2.00	"	"	--	"	104%	(75-126)	--	--	"	
Toluene	"	39.0	---	1.00	"	"	--	"	97.5%	(75-125)	--	--	"	
Trichloroethene	"	39.9	---	1.00	"	"	--	"	99.7%	"	--	--	"	
Total Xylenes	"	120	---	3.00	"	"	--	120	100%	"	--	--	"	
Surrogate(s): 1,2-DCA-d4		*Recovery: 99.1%*			*Limits: 70-130%*	*"*							*04/10/08 21:43*	
Toluene-d8		*97.8%*			*75-125%*	*"*							*"*	
4-BFB		*98.2%*			*75-125%*	*"*							*"*	
LCS Dup (8D10055-BSD1)								**Extracted: 04/10/08 17:26**						
Benzene	EPA 8260B	41.7	---	1.00	ug/l	1x	--	40.0	104%	(80-120)	2.87%	(20)	04/10/08 22:08	
Chlorobenzene	"	40.8	---	1.00	"	"	--	"	102%	"	3.62%	"	"	
1,1-Dichloroethene	"	46.5	---	1.00	"	"	--	"	116%	(75-125)	1.06%	"	"	
Methyl tert-butyl ether	"	42.2	---	2.00	"	"	--	"	106%	(75-126)	1.31%	"	"	
Toluene	"	40.7	---	1.00	"	"	--	"	102%	(75-125)	4.29%	"	"	
Trichloroethene	"	41.0	---	1.00	"	"	--	"	102%	"	2.70%	"	"	
Total Xylenes	"	125	---	3.00	"	"	--	120	104%	"	3.90%	"	"	
Surrogate(s): 1,2-DCA-d4		*Recovery: 99.0%*			*Limits: 70-130%*	*"*							*04/10/08 22:08*	
Toluene-d8		*99.4%*			*75-125%*	*"*							*"*	
4-BFB		*97.2%*			*75-125%*	*"*							*"*	

TestAmerica Seattle

Blake T. Meinert, Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400
BOTHELL, WA 98011-8244
PH: (425) 420.9200 FAX: (425) 420.9210
CS Approval Number: UST-067

Arcadis, Geraghty, & Miller - Seattle	Project Name:	**306443 (Former Unocal 0207)**	
2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

Volatile Organic Compounds by EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Seattle

QC Batch: 8D11008 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (8D11008-BLK1)										**Extracted: 04/11/08 16:36**				
Acetone	EPA 8260B	ND	---	20.0	ug/l	1x	--	--	--	--	--	--	04/11/08 23:37	
Benzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Bromobenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Bromochloromethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Bromodichloromethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Bromoform	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Bromomethane	"	ND	---	2.00	"	"	--	--	--	--	--	--	"	
2-Butanone	"	ND	---	10.0	"	"	--	--	--	--	--	--	"	
n-Butylbenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	B
sec-Butylbenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
tert-Butylbenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Carbon disulfide	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Carbon tetrachloride	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Chlorobenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Chloroethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1-Chlorohexane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Chloroform	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Chloromethane	"	ND	---	5.00	"	"	--	--	--	--	--	--	"	
2-Chlorotoluene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
4-Chlorotoluene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Dibromochloromethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,2-Dibromo-3-chloropropane	"	ND	---	5.00	"	"	--	--	--	--	--	--	"	
1,2-Dibromoethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Dibromomethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,2-Dichlorobenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	B
1,3-Dichlorobenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,4-Dichlorobenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Dichlorodifluoromethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,1-Dichloroethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,2-Dichloroethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,1-Dichloroethene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
cis-1,2-Dichloroethene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
trans-1,2-Dichloroethene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,2-Dichloropropane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,3-Dichloropropane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
2,2-Dichloropropane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,1-Dichloropropene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
cis-1,3-Dichloropropene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
trans-1,3-Dichloropropene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	

TestAmerica Seattle

Blake T. Meinert, Project Manager

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THE LEADER IN ENVIRONMENTAL TESTING

SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400
BOTHELL, WA 98011-8244
PH: (425) 420.9200 FAX: (425) 420.9210
CS Approval Number: UST-067

Arcadis, Geraghty, & Miller - Seattle	Project Name:	306443 (Former Unocal 0207)	
2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

Volatile Organic Compounds by EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Seattle

QC Batch: 8D11008 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (8D11008-BLK1)										**Extracted: 04/11/08 16:36**				
Ethylbenzene	EPA 8260B	ND	---	1.00	ug/l	1x	--	--	--	--	--	--	04/11/08 23:37	
Hexachlorobutadiene	"	ND	---	5.00	"	"	--	--	--	--	--	--	"	
Methyl tert-butyl ether	"	ND	---	2.00	"	"	--	--	--	--	--	--	"	
n-Hexane	"	ND	---	2.00	"	"	--	--	--	--	--	--	"	
2-Hexanone	"	ND	---	10.0	"	"	--	--	--	--	--	--	"	B
Isopropylbenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
p-Isopropyltoluene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
4-Methyl-2-pentanone	"	ND	---	10.0	"	"	--	--	--	--	--	--	"	
Methylene chloride	"	ND	---	5.00	"	"	--	--	--	--	--	--	"	
Naphthalene	"	ND	---	5.00	"	"	--	--	--	--	--	--	"	
n-Propylbenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Styrene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,2,3-Trichlorobenzene	"	ND	---	5.00	"	"	--	--	--	--	--	--	"	
1,2,4-Trichlorobenzene	"	ND	---	5.00	"	"	--	--	--	--	--	--	"	
1,1,1,2-Tetrachloroethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,1,2,2-Tetrachloroethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Tetrachloroethene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Toluene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,1,1-Trichloroethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,1,2-Trichloroethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Trichloroethene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Trichlorofluoromethane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,2,3-Trichloropropane	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,2,4-Trimethylbenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,3,5-Trimethylbenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Vinyl chloride	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
o-Xylene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
m,p-Xylene	"	ND	---	2.00	"	"	--	--	--	--	--	--	"	
Total Xylenes	"	ND	---	3.00	"	"	--	--	--	--	--	--	"	
Surrogate(s): 1,2-DCA-d4		*Recovery: 99.9%*		*Limits: 70-130%*	*"*								*04/11/08 23:37*	
Toluene-d8		*104%*		*75-125%*	*"*								*"*	
4-BFB		*106%*		*75-125%*	*"*								*"*	

TestAmerica Seattle

Blake T. Meinert, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.

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THE LEADER IN ENVIRONMENTAL TESTING

SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400
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CS Approval Number: UST-067

Arcadis, Geraghty, & Miller - Seattle	Project Name:	306443 (Former Unocal 0207)	
2300 Eastlake Avenue East, Suite 100	Project Number:	Chevron Alaska Sampling	Report Created:
Seattle, WA/USA 98102	Project Manager:	Mike Strickler	04/16/08 16:22

Volatile Organic Compounds by EPA Method 8260B - Laboratory Quality Control Results
TestAmerica Seattle

QC Batch: 8D11008 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
LCS (8D11008-BS1)								**Extracted: 04/11/08 16:36**						
Benzene	EPA 8260B	38.5	---	1.00	ug/l	1x	--	40.0	96.2%	(80-120)	--	--	04/11/08 20:30	
Chlorobenzene	"	37.8	---	1.00	"	"	--	"	94.5%	"	--	--	"	
1,1-Dichloroethene	"	39.5	---	1.00	"	"	--	"	98.6%	(75-125)	--	--	"	
Methyl tert-butyl ether	"	35.4	---	2.00	"	"	--	"	88.6%	(75-126)	--	--	"	
Toluene	"	38.2	---	1.00	"	"	--	"	95.4%	(75-125)	--	--	"	
Trichloroethene	"	36.9	---	1.00	"	"	--	"	92.4%	"	--	--	"	
Total Xylenes	"	124	---	3.00	"	"	--	120	103%	"	--	--	"	
Surrogate(s): 1,2-DCA-d4		*Recovery: 89.8%*		*Limits: 70-130%*	"								*04/11/08 20:30*	
Toluene-d8		*104%*		*75-125%*	"								"	
4-BFB		*101%*		*75-125%*	"								"	
LCS Dup (8D11008-BSD1)								**Extracted: 04/11/08 16:36**						
Benzene	EPA 8260B	39.2	---	1.00	ug/l	1x	--	40.0	98.1%	(80-120)	1.90%	(20)	04/11/08 20:59	
Chlorobenzene	"	37.9	---	1.00	"	"	--	"	94.8%	"	0.370%	"	"	
1,1-Dichloroethene	"	40.5	---	1.00	"	"	--	"	101%	(75-125)	2.50%	"	"	
Methyl tert-butyl ether	"	38.5	---	2.00	"	"	--	"	96.2%	(75-126)	8.25%	"	"	
Toluene	"	37.9	---	1.00	"	"	--	"	94.8%	(75-125)	0.604%	"	"	
Trichloroethene	"	37.3	---	1.00	"	"	--	"	93.2%	"	0.916%	"	"	
Total Xylenes	"	123	---	3.00	"	"	--	120	103%	"	0.275%	"	"	
Surrogate(s): 1,2-DCA-d4		*Recovery: 94.6%*		*Limits: 70-130%*	"								*04/11/08 20:59*	
Toluene-d8		*101%*		*75-125%*	"								"	
4-BFB		*101%*		*75-125%*	"								"	

TestAmerica Seattle

Blake T. Meinert, Project Manager

Notes and Definitions

Report Specific Notes:

- B - Analyte was detected in the associated Method Blank.
- Q1 - Does not match typical pattern
- Q8 - Detected hydrocarbons in the gasoline range appear to be due to overlap of diesel range hydrocarbons.
- Q9 - Hydrocarbon pattern most closely resembles kerosene.
- R4 - Due to the low levels of analyte in the sample, the duplicate RPD calculation does not provide useful information.
- RL1 - Reporting limit raised due to sample matrix effects.
- Z - Due to sample matrix effects, the surrogate recovery was below the acceptance limits.
- ZX - Due to sample matrix effects, the surrogate recovery was outside the acceptance limits.

Laboratory Reporting Conventions:

- DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.
- ND - Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).
- NR/NA - Not Reported / Not Available
- dry - Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.
- wet - Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.
- RPD - RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).
- MRL - METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.
- MDL* - METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. *MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.
- Dil - Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.
- Reporting Limits - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.
- Electronic Signature - Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy.* Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

TestAmerica Seattle

Blake Meinert

Blake T. Meinert, Project Manager

TestAmerica Seattle
11720 North Creek Parkway N
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Bothell, WA 98011
phone 425.420.9200 fax 425.420.9210

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Greg Montgomery	Site Contact: Mike Strickler	Date: March 30, 2008	COC No:
Arcadis		Lab Contact: Blake Meinert	Carrier: Fed Ex	______ of ______ COCs
2300 Eastlake Ave East, Suite 200	Analysis Turnaround Time			Job No.
Seattle, WA 98102	Calendar (C) or Work Days (W) ________			
206-726-4742 (Greg Montgomery)	TAT if different from Below ________			
(xxx) xxx-xxxx FAX	☒ 2 weeks			SDG No.
Project Name: 306443 (Former Unocal 0207)	☐ 1 week			
Site: Gate 28, WEST RAMP, FIA	☐ 2 days			BRD0022
Project # ArcadiS # 45507 Tak 1	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	GRO by AK101	BTEX by EPA 8021	VOCs by EPA 8260B (Full List)		DRO by AK102	RRO by AK103		Total Lead by EPA 6010	Sample Specific Notes:
GEI-2-W-080329	3/29/2008	1630		W	3		X	X							Insufficient Volume for DRO, RRO 01
GEI-3-W-080329	3/29/2008	1700		W	5		X	X			X	X			02
GEI-4-W-080329	3/29/2008	1615		W	5		X	X			X	X			03
GEI-5-W-080329	3/29/2008	1800		W	5		X	X			X	X			04
GEI-6-W-080329	3/29/2008	1715		W	10		X	X	X		X	X		X	05
GEI-7-W-080329	3/29/2008	1545		W	5		X	X			X	X			06
GEI-8-W-080329	3/29/2008	1515		W	5		X	X			X	X			07
GEI-9-W-080329	3/29/2008	1430		W	10		XX	X	X		X	X		X	08
DUP-1-W-080329	3/29/2008	0600		W	5		X	X			X	X			09
QA-T-W-W-080329	3/29/2008	0600		W			X	X							TRIP BLANK 10
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ________							2	2			2	2		4	

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For ________ Months*

Special Instructions/QC Requirements & Comments: Volatile samples may require dilutions.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	OAS+S	1130 3-31-08	Cathy Gamble	TA Sea	4/2/08 9:45

TestAmerica Seattle
11720 North Creek Parkway N
Suite 400
Bothell, WA 98011
phone 425.420.9200 fax 425.420.9210

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Greg Montgomery	Site Contact: Mike Strickler	Date: March 30, 2008	COC No:
Arcadis		Lab Contact: Blake Meinert	Carrier: Fed Ex	____ of ____ COCs
2300 Eastlake Ave East, Suite 200	Analysis Turnaround Time			Job No.
Seattle, WA 98102	Calendar (C) or Work Days (W) ______			
206-726-4742 (Greg Montgomery)	TAT if different from Below ______			SDG No.
(xxx) xxx-xxxx FAX	[x] 2 weeks			
Project Name: 306-443 (Former Unocal 0207)	[ ] 1 week			
Site: Gate 28, WEST RAMP, FIA	[ ] 2 days			BRD0022
Project # ArcadiS # 45507 Tak 1	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	GRO by AK101	BTEX by EPA 8021	VOCs by EPA 8260B (Full List)	DRO by AK102	RRO by AK103	Total Lead by EPA 6010	Sample Specific Notes:
PW-W-080329	8/29/2008	1810		W	3		X	X					11
Preservation Used: 1=Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ______							2	2					

Possible Hazard Identification
[ ] *Non-Hazard* [ ] *Flammable* [ ] *Skin Irritant* *Poison B* [ ] *Unknown* [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] *Return To Client* [x] *Disposal By Lab* [ ] *Archive For ______ Months*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	OASIS	1130 3-31-08			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

TestAmerica
ANALYTICAL TESTING CORPORATION

SAMPLE RECEIPT FORM

Date/Time: 4/2/2008 4:18:50PM

Client Code: 1416938

DMA Project Number: BRD0022

Received By: Cathy Gamble

Logged By: Deborah Brechler

Sample Temperature: 8.8°C

Samples Received: [X] On Ice [X] On Blue Ice [ ] Unchilled

Check All that Apply:

Analysis	N/A	pH Verified	Additional Preservative Added?	Sample Numbers Needing Adjustment
500ml Amber w/HCL	[ ]	[ ]	[ ] HCL	
1L Amber w/HCL	[ ]	[ ]	[ ] HCL	
Poly w/HNO3	[ ]	[ ]	[ ] HNO3	
Poly w/H2SO4	[ ]	[ ]	[ ] H2SO4	
500ml Amber w/H2SO4	[ ]	[ ]	[ ] H2SO4	
1L Amber w/H2SO4	[ ]	[ ]	[ ] H2SO4	
Poly w/NaOH	[ ]	[ ]	[ ] NaOH	
Poly w/ NaOH + Zinc Acetate	[ ]	[ ]	[ ] NaOH + Zinc Acetate	

Volatile Soil Samples Received in: ____ N/A ____ Brass Sleeves ____ Glass Jars ____ Encore ____ Field Methanol

____ Other: ____________

Date	Initials	Sample Number	Comments
4/2/2008		BRD0022-01	
4/2/2008		BRD0022-02	
4/2/2008		BRD0022-03	
4/2/2008		BRD0022-04	
4/2/2008		BRD0022-05	
4/2/2008		BRD0022-06	
4/2/2008		BRD0022-07	
4/2/2008		BRD0022-08	

4/2/2008		BRD0022-09	
4/2/2008		BRD0022-10	
4/2/2008		BRD0022-11	

Reviewed By ____________ Date ____________ Time ____________

TAT: ________ Paperwork to PM – Date ______ Time ______ Non-Conformances? Circle Y or N (If Y, see other side)

TEST AMERICA SAMPLE RECEIPT CHECKLIST

350, 302, 347, 355, ~~311~~ CG 4/2, 301

Received By: (applies to temp at receipt)
Date: 4/2
Time: 9:45
Initials: CG

Logged-in By:
Date: 4/2/08
Initials: BO

Unpacked/Labeled By:
Date: 4/2/08
Initials: ~~BO~~ MW

Cooler ID: ____ (___ of ___)

Work Order No. BRD0022
Client: Arcadis - Seattle
Project: 306443 (Former Unocal C&T)

Container Type:
✓ Cooler
___ Box
___ None/Other ______

COC Seals:
✓ Ship. Container
___ On Bottles
___ None
Sign By
3/31 Date

Packing Material
✓ Bubble Bags
___ Styrofoam
___ Foam Packs
___ None/Other Other ______

Refrigerant:
✓ Gel Ice Pack ______
✓ Loose Ice
___ None/Other ______
___ None

Received Via: Bill# ______
✓ Fed Ex ___ Client
___ UPS ___ TA Courier
___ DHL ___ Mid Valley
___ Senvoy ___ TDP
___ GS ___ Other ______

Cooler Temperature (IR): ___°C Plastic Glass (circle one) (Frozen filters, Tedlars and aqueous Metals exempt)

Temperature Blank? ___°C or NA 4.9, 3.0, 3.3, 8.8, ~~2.1~~ CG 4/2, 5.5 Trip Blank? Y or N or NA

Sample Containers:		ID			ID
Intact?	Y or N		Metals Preserved?	Y or N or NA	
Provided by TA?	Y or N		Client QAPP Preserved?	Y or N or NA	
Correct Type?	Y or N		Adequate Volume? (for tests requested)	Y or N	
#Containers match COC?	Y or N	22-054-08	Water VOAs: Headspace?	Y or N or NA	
IDs/time/date match COC?	Y or N		Comments:		
Hold Times in hold?	Y or N				

PROJECT MANAGEMENT

Is the Chain of Custody complete? Y or N If N, circle the items that were incomplete

Comments,Problems ______

Total access set up? Y or N
Has client been contacted regarding non-conformances? Y or N If Y, ___/___ Date Time

PM Initials: ______ Date: ______ Time: ______

NOTIFICATION OF DISCREPANCY

DATE: ________	*TIME:* ________	*PM:* ________	*SC INITIALS:* ________
Rush/Short Hold? ☐ *Yes* ☐ *No*			

☐ **Project Not Set Up in ELM** ☐ **New Client** ☐ **COC Received ON HOLD**
☐ **Analysis Requested on COC – Not Listed for Project in ELM**

☐ **PM To Add Analysis:** ____________________
☐ **Clarification of Analysis:** ____________________
☐ **Hold Time Expired: (Analysis)** ____________________
☐ **Turnaround Time Not Checked:** ____________________
☐ **Did Not Receive Sample(s) Listed on COC:** ____________________

☐ **Received Extra Sample(s) Not Listed on COC:** ____________________

☐ **Sample Description(s) or Date/Time Sampled Do Not Match COC:**

☐ **Improper Preservative For method:** ____________________
☐ **Sample Received Broken:** ____________________
☐ **Insufficient Sample Volume:** ____________________
☐ **Sample preserved upon receipt:** ____________________

☐ **Temperature Outside recommended range (4°C±2°C):** ____________________
 ☐ **Received on-ice within 4 hours of collection, temperature between ambient to 2°C acceptable.**
☐ **Other:**

PROJECT MANAGER RESOLUTION:		(Date & Time when returned to SC)
Approval By:	**Date:**	**Time:**

Laboratory Data Review Checklist

Completed by: Michael L. Strickler

Title: Geologist I Date: Apr 29, 2008

CS Report Name: First Semi-Annual 2008 Groundwater Monitoring Report Report Date: Aug 13, 2008

Consultant Firm: ARCADIS

Laboratory Name: TestAmerica Laboratory Report Number: BRD0022

ADEC File Number: 100.26.040 ADEC RecKey Number: 1992310003501

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
   ◉ Yes ○ No Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
   ○ Yes ○ No Comments:

   N/A

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?
   ◉ Yes ○ No Comments:

   b. Correct analyses requested?
   ◉ Yes ○ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?
   ○ Yes ◉ No Comments:

   8.8 Degrees Celsius according to the case narrative.

b. Sample preservation acceptable - acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

◉ Yes ○ No Comments:

c. Sample condition documented - broken, leaking (Methanol), zero headspace (VOC vials)?

○ Yes ○ No Comments:

N/A

d. If there were any discrepancies, were they documented? - For example, incorrect sample containers/ preservation, sample temperature ouside of acceptance range, insufficient or missing samples, etc.?

○ Yes ○ No Comments:

N/A

e. Data quality or usability affected? Explain.

Comments:

Data quality or usability does not appear to be affected.

4. Case Narrative

a. Present and understandable?

◉ Yes ○ No Comments:

b. Discrepancies, errors or QC failures identified by the lab?

◉ Yes ○ No Comments:

c. Were all corrective actions documented?

○ Yes ○ No Comments:

N/A

d. What is the effect on data quality/usability according to the case narrative?

Comments:

N/A

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

◉ Yes ○ No Comments:

b. All applicable holding times met?

◉ Yes ○ No Comments:

c. All soils reported on a dry weight basis?

○ Yes ○ No Comments:

N/A

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?

○ Yes ◉ No Comments:

1,2-dibromoethane method detection limits are higher than the ADEC GCL.

e. Data quality or usability affected? Explain.

Comments:

Data quality or usability does not appear to be affected.

6. <u>QC Samples</u>

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

◉ Yes ○ No Comments:

ii. All method blank results less than PQL?

◉ Yes ○ No Comments:

iii. If above PQL, what samples are affected?

Comments:

N/A

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

○ Yes ○ No Comments:

N/A

v. Data quality or usability affected? Explain.

Comments:

N/A

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics - One LCS/LCSD reported per matrix, analysis and 20 samples?

◉ Yes ◯ No Comments:

ii. Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples?

◉ Yes ◯ No Comments:

iii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

◉ Yes ◯ No Comments:

iv. Precision - All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

◉ Yes ◯ No Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

N/A

vi. Do the affected samples(s) have data flags? If so, are the data flags clearly defined?

◯ Yes ◯ No Comments:

N/A

vii. Data quality or usability affected? Explain.

Comments:

N/A

c. Surrogates - Organics Only

i. Are surrogate recoveries reported for organic analyses - field, QC and laboratory samples?

◉ Yes ◯ No Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

○ Yes ◉ No Comments:

Several surrogate recoveries were below or outside of the acceptance limits due to matrix effects.

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

◉ Yes ○ No Comments:

iv. Data quality or usability affected? Explain.

Comments:

Data quality or usability does not appear to be affected.

d. Trip Blank - Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

◉ Yes ○ No Comments:

ii. All results less than PQL?

◉ Yes ○ No Comments:

iii. If above PQL, what samples are affected?

Comments:

N/A

iv. Data quality or usability affected? Explain.

Comments:

N/A

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

◉ Yes ○ No Comments:

ii. Submitted blind to lab?

◉ Yes ○ No Comments:

iii. Precision - All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

$$RPD\ (\%) = \text{Absolute Value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

(•) Yes ( ) No Comments:

iv. Data quality or usability affected? Explain.
( ) Yes ( ) No Comments:

N/A

f. Decontamination or Equipment Blank (if applicable)

( ) Yes ( ) No (•) Not Applicable

i. All results less than PQL?
( ) Yes ( ) No Comments:

N/A

ii. If above PQL, what samples are affected?
Comments:

N/A

iii. Data quality or usability affected? Explain.
Comments:

N/A

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?
( ) Yes ( ) No Comments:

N/A

Reset Form